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ABSTRACT

Literature on vocational education research and development (R&D) was reviewed to determine the distribution, utilization, and impact of R&D information and products. The literature indicated both slightly and strongly negative findings on the dissemination of vocational education R&D products. Many of the studies described strategies for product dissemination, and direct personal contact was found to be most effective. Criteria for measuring dissemination were also identified. Readers found the language of the products, one major problem in product acceptance, to be cumbersome and unclear. A disappointing finding of the literature review on utilization was the lack of studies determining the extent to which products were being used. Most studies were concerned with what constitutes use, levels of use, and effective strategies for product utilization. The few studies on product impact revealed that a major problem in studying impact is its measurement. Another concern was inconsistency of findings of the literature concerning impact. Following the 18-page narrative is a literature review subject matrix, abstracts of the literature that was reviewed in alphabetical order by author, and a bibliography. Each abstract provides this information: author, title, place, institution, and date. (YLB)

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THE IMPACT OF VOCATIONAL EDUCATION RESEARCH AND DEVELOPMENT: A LITERATURE REVIEW

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TABLE OF CONTENTS

	Page
Introduction.	1
Summary of the Literature Review.	3
Product Dissemination.	3
Adaptation and Use of Products	7
R&D Product Impact	11
Literature Review Subject Matrix	19
Abstracts.	25
Bibliography	132

INTRODUCTION

The Committee on Vocational Education Research and Development (COVERD, 1976) was unable to find that vocational education research and development (R&D) had influence on the knowledge, skills, or employability of large numbers of students. The Committee believed "that vocational education R&D shares with educational R&D a lack of both demonstrated impact on students and methods for rigorously measuring impact" (COVERD, 1976). Congress responded to this criticism by requiring applicants for R&D funding to "demonstrate a reasonable probability that such grants will result in improved teaching techniques or curriculum materials...in a substantial number of classroom or learning situations within five years after the termination date of such grant" (P.L. 94-483, Sec. 171(b)). It is clear that emphasis should be given to a nationwide effort to document the distribution, utilization, and impact of vocational education R&D. This literature review was conducted as part of a study currently being carried out by the National Center for Research in Vocational Education to determine the distribution, utilization, and impact of R&D information and products. The literature review was conducted primarily for the following three reasons:

1. to determine the state-of-the-art of knowledge in this area;

2. to identify studies with research findings relevant to the needs of the project;

3. and, to identify procedures and techniques for studying R&D product distribution, use, and impact.

This document includes a few studies of non-vocational education products. It is difficult to report on vocational education without including studies in general education. Many of the definitions, techniques, instruments, etc., in vocational education are mutually applicable for educational studies in general. The studies are classified on the following pages.

Following this introduction is a summary of the literature review. A literature review subject matrix follows. Next, the items comprising the literature are presented in abstract form. A bibliography concludes the paper.

Summary of the Literature Review

Product Distribution

The literature that was reviewed on dissemination of vocational education R&D product basically fits into three categories: (1) extent to which vocational education R&D products have been distributed, (2) strategies for implementation, and (3) criteria for measuring dissemination.

Extensiveness

With the exception of Ellis (74), the literature which was reviewed indicated slightly negative to strongly negative findings on the dissemination of vocational education R&D products. The National Academy of Sciences (78) recommended that a greater effort be attempted in dissemination of high quality research results. The understanding of dissemination's role in the process of innovation and change is much too weak. Development Associates (78) found that very little had been done to measure the impact of dissemination of educational innovations. Robinson (71) found that the dissemination of products is restricted by "gatekeepers" (individuals within communication systems who, through a process of selection, restrict the flow of information to the receiver). Robinson concluded that supervisors were aware of teacher needs but did not disseminate publications to meet those needs. Furthermore, Magisos (72) reported that commitment to developing an information dissemination system at state and local levels was

lacking, but that attempts were being made to remedy this.

Blake (75) observed that even though there are mechanisms working at all levels in the dissemination process (and many are working well,) there is much room for improvement. Even if many practitioners tried to make use of the best information available, problems would arise because (a) many practitioners cannot see the relationship between real problems and their need for R&D products; (b) many practitioners cannot identify, locate, and acquire useful products; and (c) many practitioners are not sure of the reliability or validity of the R&D products.

However, Ellis' (74) findings showed that demonstration centers were very effective as a dissemination technique. The demonstration centers helped to create an awareness of educational innovations; and many non-educators became informed of these innovations.

Strategies

Many of the studies described the strategies of dissemination for research and development products. The Dissemination Analysis Group (DAG) (77) proposed several steps be taken to create an interrelated nationwide system for educational dissemination. However, the DAG Report emphasized the need for planning and coordinating functions at the federal level "to insure that the separate dissemination activities within agencies and between OE and NIE fit together in support of an interrelated nationwide system." Development Associates (78) listed several

strategies, but they found that direct personal contact was the most effective strategy, while reliance primarily on printed material was not very effective. Other strategies mentioned by Development Associates included (a) demonstration project opened to visitors; (b) presentations and/or displays at various meetings; (c) ERIC; (d) workshops on training sessions; (e) regional labs and demonstration centers; and (f) endorsement and support from state educational agencies. Furthermore, Development Associates found that little work has been done on the cost effectiveness of various dissemination strategies and quality assessments of dissemination materials. Jones (77) presented state and local strategies for encouraging the spread of Part D exemplary project results. Hull and Kester (75) surveyed over 500 vocational educators to determine the perceived effectiveness of dissemination techniques. The use of interpersonal influence was highly valued by all types of persons surveyed regardless of the innovation's state of implementation in the adopting site. Blake (75) includes many of the strategies already mentioned, but adds (a) reducing anxiety concerning overlapping and duplication of services; (b) giving dissemination top priority within RCUs; and (c) developing plans to include school library media specialists.

Sims (76) developed the Omnibus Model consisting of eight different action blocks. This model serves as a "gatekeeper"-type dissemination process. In other words, each decision making

block serves as a "gatekeeper" for asking whether information from research and development projects is a good innovation, whether there is financial support for its diffusion, and whether there might be other more appropriate channels for its diffusion. Lynn (78) states that the first way to improve dissemination is for researchers to write better. However, Lynn believes that the best way is by integrating research dissemination directly with the planning and programming system. Another strategy of dissemination would be extra-agency channels, such as newspapers and general magazines; publications of this type represent a major source of reference for policy makers.

Criteria

Stufflebean (66) includes the following criteria for disseminating products: intelligibility, fidelity, pervasiveness and impact, creditability, convenience, and evidential assessment. Scrivens (74) checklists includes measures of product quality and extent of dissemination. Development Associates (78) found that outcome criteria on measures designed to measure success vary according to objectives. Development Associates summarized their criteria for successful dissemination in the following categories: (a) number of organizations and groups which attended presentations; (b) number of printed materials that the project distributed; (c) number of visitors to the project; (d) inclusion in ERIC; (e) number and name of task forces in which project staff participated; (f) statewide diffusion of state adopted curriculum; (g) cost of dissemination; and (h) quality of dissemination materials and other dissemination strategies.

Adaptation and Use of Products

Distribution of products is pointless, though, unless the products are used. One aspect is the problem of interpreting the products because of the language. Don Shannon (78), Executive Director of the National School Board Association, stated in a speech that one of the biggest problems of lawyers and researchers is that they seem to have their own vocabulary. In other words, the client often does not know what is being said. If research cannot be understood, it cannot be written about clearly. Therefore, the reader cannot understand the products.

A disappointing finding of the literature review on utilization is that there are few studies determining the extent to which vocational education R&D products are being used. Most of the studies are concerned with what constitutes use, levels of use, and effective strategies for utilization of vocational education R&D products.

Time Frame

One concern that needs to be addressed is the time that is required for change to take place. How much time is needed for the maximum impact of the use of a product to be detected? Among several comments that Goble (73) had about mission-oriented and non-mission oriented research is that for the cases studied "the average time from the conception to demonstration of an innovation was nine years." Closely related to time to imple-

ment an innovation, Gillie (71) found that the business-industry community spends about 75 percent of its basic research monies for finding new ways to implement new ideas and practices.

Use Defined

Lynn (78) states that "use of research" is an inexact and confusing concept. For instance, how many people and what sort of effort are required before research can be termed "used"? Lynn suggests that "use" occurs when a decision maker "considers the findings of a study or a group of related studies for near-term resolution of a probing problem." Sieber (72) indicated in a study on the use of an educational innovation that over 40 percent got some "use" from information when asked to respond to one of five categories:

(a) A specific practice or program was implemented--9 percent

(b) Vague response, indicating that some implementation occurred--10 percent

(c) Use for planning or proposal writing--22 percent

(d) The material was read, but no specific use was made of it--49 percent

(e) Negative comment about the material--9 percent

However, Sieber stated that it is unclear as to what a "good" rate of use should be. In order for the "use" to be at a higher rate, Hood (75) says that the product should be presented in such a manner that it can be perceived. Teachers like products in the form of curriculum materials, texts, and reference books, instead of in the form of technical reports and

abstracts. McCracken (70) found that teacher educators were more likely than state supervisors to use research-oriented literature and to search impersonal sources of information. State supervisors were more likely than teacher educators to use guidebooks and summaries and interpretations of research.

Adaptation

The adaptation of products goes through several phases. Hall and Alford (76) include six phases of adaptation: awareness, adoption decision, implementation, incorporation, evaluation, and secondary diffusion. Havelock, a participant in a workshop chaired by Townes (70), gave the following stages of the change process: (1) building a relationship between the change agent and client; (2) diagnosing the problem; (3) acquiring relevant resources; (4) choosing the solution; (5) gaining acceptance; and (6) stabilizing the innovation and generating self-renewal.

Even so, educational research is of value primarily when it can be adapted or used by educators to assist students in the learning process. The initiation of a change in an educational institution can be effectively facilitated by the incorporation of a well-thought-out strategy. Gillie (71) offers the following for consideration:

(a) Innovation should be modified to blend with cultural norms and past experiences.

(b) Opinion leaders must believe in it.

(c) Users must see the need for incorporation.

(d) Users must understand that the purpose of change is to increase competence.

(e) Social consequences of an adopted change should be anticipated.

Furthermore, utilization of research and development products can be aided by administrators (Rutger University, 70). Administrators should incorporate change processes into plans and incorporate utilization strategy topics into administrative staff meetings.

Perception of Use

Swanson (76) warns that there are times that use occurs when it is relatively unseen or unaccounted for. Much R&D is used before it is summarized and reported. Much R&D is used when the consumer has no knowledge of the origin of the idea. Some R&D becomes useful, but is is used in a way that was not intended in the beginning. Use does not occur many times due to such problems as different interests and attitudes which tend to separate those who are the producers of R&D from those who are its consumers; and there are widely differing expectations about the possible impact of new knowledge and information.

Recommendations

Bice (75) suggests some recommendations to alleviate some of the problems of dissemination and utilization. They include (1) developing a taxonomy for identifying and describing research results; (2) defining target audiences and their specific information needs; (3) analyzing personal and sociopsychological

factors involved; (4) developing a process for evaluation of research before dissemination; (5) reexamining procedures for inclusion in information systems; (6) implementing a system of regional centers responsible for dissemination and utilization; (7) reexamining federal and state policy; and (8) exploring alternative delivery systems for encouraging use.

R&D Product Impact

The extent to which products and information are being used does not necessarily indicate whether or not any educational change is taking place. Educational change, as it is used here, is defined as a deviation from baseline data and includes a broad spectrum of the educational enterprise--professional staff, students, facilities, policies, etc.

Few studies have been made on product impact. Many more have been conducted on research coordinating units, career education, demonstration projects, and vocational education projects in general. The study by Miller and Miller (74) provides thoroughly documented evidence of product impact. Another study of product impact by Crawford (72) is valuable for examining procedures and techniques for obtaining evidence of product impact. However, it examines educational research and development products, not vocational education research and development products.

The other study which examined product impact is the COVERD Report (76). COVERD stated that "the available data

does not indicate that vocational education research and development (R&D) findings and products have had an influence on the knowledge, skills, or employability of large numbers of students." However, the results of the COVERD study are weakened by a lack of R&D objectives, insufficient data, and subjective impact measures.

Measuring Impact

The literature reveals that one of the major problems in studying product impact is its measurement. Boerrigter (76) made some interesting comments related to the difficult task of assessing the impact of research and development resources. Boerrigter states that "we do know that it is making a rather substantial impact but trying to really get a handle on it to assess it and so forth and to bring this kind of information to Congress is most difficult... ." Hull and Bina (1977) compared vocational education exemplary projects based on low, medium, or high levels of continuation following the termination of federal funds. This technique revealed administrative procedures which were present in the high continuation sites. Dick (76) contends that impact is "next to impossible to assess if the evaluation of the research is ex post-facto." Dick advocates continuous evaluation, both internal and external. Suppes (78) also agrees that impact is hard to assess, but he found that research does have an impact and "it certainly does in many different ways." For example, one often unmeasured impact is that of legitimization,

giving the support of "facts" and the "prestige of science to existing trends and movements." Another overlooked measure of impact is the extent to which the information is used in textbooks, and Suppes studies show that much research is used in textbooks. Hopkins (76) suggests a number of criteria for reviewing educational programs and products. Some of these are adaptability, intrinsic quality, desirability, effectiveness, and efficiency. In some cases "spinoffs" are considered an important criteria.

Positive or Negative Impact

A concern of this reviewer is the inconsistencies of the literature. Of the twenty four studies that were reviewed in this section, ten appeared to be positive and five negative. The others addressed impact in general with no particular positive or negative connotations. Yet, the general feeling of many is that research and development has not had an impact. If numbers of studies pro or con is any indication of impact (of course, this in no way can be a reliable measure or valid at this point in time), then we could assume that research and development is making an impact. Some of the positive findings briefly summarized are as follows:

(1) Miller & Miller (74), among many other findings, found that ninety four percent of the state administered (Part C) research and federal and state exemplary projects (Part D) show some impact, and

two thirds of the projects show considerable impact.

(2) Suppes (78) researched several studies to determine the impact of research on education and found that research does have an impact on education.

(3) Reece (76) showed the positive impact of funded research and developmental activities on departments and divisions of vocational education in higher education.

(4) DOL/MR&D (75) noted the success of the Manpower Research and Development Program in dealing with labor force data, new theories on labor market operations, program modules, and techniques and methods of assessing Manpower policies, but they suggested that there was still need for Manpower R&D to do more.

(5) Conroy (76) found in studying the impact of Secondary School Occupational Education in Massachusetts that trade and industrial students who did not attend post-secondary schools earned significantly more than both non-occupational students who did not attend post-secondary school and male students from all programs who attended or graduated from two-year public colleges and state universities.

(6) Goldhammer, et al (69), McCaslin and Walton (74),

were positive in their findings about the impact of research coordinating units.

(7) McCaslin, Adams, and Gross (76) concluded that the Kentucky Research Coordinating Unit had an adequate to high impact.

On the other hand, there are studies which found little evidence that research and development had made an impact. Briefly summarized, they are as follows:

(1) The COVERD Report (76) said that "the Committee has found that the $250 million spent by the U. S. Office of Education on vocational education research and development during the last ten years has not had documented, widespread impact."

(2) The Comptroller General Report (74), often referred to as the GOA report, pointed out, among other things, the need for closer monitoring of federal funds for vocational education at all levels and encourages cooperation between and among agencies to provide vocational education for youth and adults.

(3) Kievit (75) found very limited empirically derived evidence regarding the extent to which vocational research and development has influenced teachers to change practices.

(4) Venn (75) concluded that the time spent on his study

"has not led him to believe that vocational education R&D has caused major changes in education to any great degree." (However, Venn admits that he cannot tell whether the conclusions came from his readings, study, experience, or personal prejudices.)

(5) Mayhew (74) did research based on a study of curricular and instructional changes taking place in two- and four-year colleges and in programs designed to prepare people for vocations or careers. The study had disappointing results. Vocational or occupational curricula were found to be not particularly innovative, and education for careers and occupations was found to be a display of traditional practice accompanied by theorizing.

One would have to read these studies and others in order to make concrete conclusions about the impact of vocational education research and development products. However, from the literature reviewed, there is much evidence of impact of research and development products. An issue that has not yet been resolved is that of determining when impact occurs. For instance, some researchers may view impact as occurring when a predetermined change takes in 25 percent of the target population. Others may contend that there is no substantial impact when a predetermined change takes place in even 60 percent of a target population. As one can see, this inconsistency in

the research studies is largely a matter of well defined definitions or parameters.

Continuation

Miller and Miller (74) point out that small projects have altered the structure of vocational education in states as well as in some nations. Information systems have benefited state planners, teachers, and students. Behavioral objectives have been written for training programs in nearly two hundred jobs. Nationwide curriculum coordination networks have been instituted. A primary rationale presented for the continuance of vocational research and development (Pucinski, 75) is that major technological changes will require the development of curriculum programs to meet the changing needs of industry as new jobs continue to emerge. These curriculum programs include new and innovative programs such as; retraining of the unemployed, the provision of opportunities for women, the disadvantaged, and handicapped; effective guidance and counseling programs; and the development of statewide management information systems.

A Closing Comment

The literature suggests that in order to increase the impact of research and development products there should be improved definition and acceptance of concepts such as dissemination, use, and impact. Funding agencies should specify impact data collection needs at the time contracts are awarded. Project directors need guidelines for record keeping and data collection. Guidelines would enable them to record events as

they happen. Such a positive, direct approach would eliminate the need for after-the-fact studies which rely on respondents' memories to reconstruct past events.

A systematic approach to impact data analysis is needed which cuts across projects and state lines. Agreed-upon definitions would allow researcher, administrator, and practitioner to agree on the outcomes of research. Standardized definitions would allow meaningful summary of data and interpretation of cumulative project results. Clearly, the need to document the use and impact of research and development is present. Activities to do so should proceed at full steam ahead.

LITERATURE REVIEW
SUBJECT MATRIX

LITERATURE REVIEW SUBJECT MATRIX						
AUTHORS	DISTRIBUTION	USE	IMPACT	IMPACT INSTRUMENT DEVELOPMENT SOURCE	METHODOLOGY	GENERAL EDUCATION RELATED STUDIES
American Mgt. Center (1972)			X			
An Evaluation of Exemplary Projects (1975)			X			
COVERD Report (1976)			X			
Bash (1970)				X		
Berman and McLaughlin (1978)		X	X			
Bice (1975)	X	X				
Blake (1975)	X					
Boerrigter (1976)			X			
Butt (1974)				X	X	
Carvell and Draheim (1972)			X			
Conroy and Diamond (1976)			X			
Clemmons (1975)			X			
Crawford, Jack (1972)			X	X		X
Crawford, Jack (1971)			X		X	X

LITERATURE REVIEW SUBJECT MATRIX						
AUTHORS	DISTRIBUTION	USE	IMPACT	IMPACT INSTRUMENT DEVELOPMENT SOURCE	METHODOLOGY	GENERAL EDUCATION RELATED STUDIES
Crawford, Lucy (1973)	X	X				
Cuadra (1968)			X	X		X
DAG (1977)	X					X
Dick (1976)			X		X	X
Dillie (1976)			X			
Florida RCU (1979)			X			
Education Impact... (1975)			X			
Ellis, Joseph R. (1974)			X			
Ellis, Mary L. (1975)			X			
Gillie (1971)		X				
Goldhammer (1969)			X			
Goble (1973)		X				X
Hall and Alford (1976)		X		X		
Hall (1977)		X		X		
Hensley (1978)		X	X			
Hjelm and Boerrigter (1974)			X			
Hood (1975)		X				X

LITERATURE REVIEW SUBJECT MATRIX						
AUTHORS	DISTRIBUTION	USE	IMPACT	IMPACT INSTRUMENT DEVELOPMENT SOURCE	METHODOLOGY	GENERAL EDUCATION RELATED STUDIES
Hopkins (1976)			X			X
Hu (1975)			X			
Hull and Bina (1977)			X			
Hull and Kester (1975)	X					
Jones, Bina and Hull (1977)	X		X			
Kenneke (1977)			X			
Kievit (1975)		X				
Knowledge and Policy... (1975)			X			
Leadership and Change... (1970)		X				
Literature Review (1978)	X		X			
Lofts (1977)		X				
Loucks (1977)		X		X	X	
Lynn (1978)	X	X				
Magisos and Moore (1977)			X			
Magisos (1972)	X					
Manning (1975)		X		X		
Manning (1973)		X		X		

LITERATURE REVIEW SUBJECT MATRIX						
AUTHORS	DISTRIBUTION	USE	IMPACT	IMPACT INSTRUMENT DEVELOPMENT SOURCE	METHODOLOGY	GENERAL EDUCATION RELATED STUDIES
Mayhew (1974)			X			
McCaslin (1976)			X			
McCaslin and Walton (1974)			X			
McCaslin and Walton (1973)			X	X		
McCracken and Gillespie (1973)		X				
McCracken (1970)		X				
Miller and Miller (1974)			X			
Pascal (1975)			X			
Reece (1976)			X			
Report to the Congress (GAO Report) (1974)			X			
Robinson (1971)	X					
Scanlon (1976)		X				
Schaefer (1975)		X	X			
Sheppard (1976)			X			
Sieber (1972)		X				
Sims (1976)	X					

LITERATURE REVIEW SUBJECT MATRIX						
AUTHORS	DISTRIBUTION	USE	IMPACT	IMPACT INSTRUMENT DEVELOPMENT SOURCE	METHODOLOGY	GENERAL EDUCATION RELATED STUDIES
Suppes (1978)			X			X
Swanson (1976)		X				
The Federal Investment... (1978)	X	X				
Tittle (1977)			X			
Towne (1970)		X				
Turner (1979)		X	X			
Turner (1979)			X			
Turner and Haley (1975)				X		
U.S.D. of HEW (1975)			X		X	
U.S.D. of HEW (1975)			X		X	
Venn (1975)	X	X	X			
Wanger (1972)		X	X	X		

Abstracts:

An Assessment of the Impact of Vocational Education Research and Related Projects on Educational Practice in Pennsylvania Since 1966. Philadelphia, Pennsylvania: American Management Center, Incorporated, August 15, 1972.

The study gathered descriptive data on 115 RCU projects funded from 1966 through March 1972. Its general findings were that: (1) most projects were housed in public schools (grades 9-12) serving large rural or urban communities; (2) most targeted populations were "regular" students but disadvantaged and handicapped students were represented; (3) research, curriculum development, and training programs were the major foci of most projects: (4) project impact on educational practices tended to be limited to local geographic areas; (5) local vocational education advisory councils were little used, but when used, they proved to be effective; (6) most project trainees were white, with blacks accounting for 7.5 percent of all trainees and (7) adequacy of RCU funding external and internal influences, and assistance received had the strongest influences on outcomes among all those projects.

Based on these findings it was suggested that directions better utilize internal sources of influence (parents, students, advisory councils, and others) and that the role of the RCU be expanded in terms of greater interaction with projects during and after funding.

An Evaluation of Vocational Exemplary Projects: Part D Vocational Education Act Amendments of 1968. Washington, D.C.: Development Associates, Inc., March 1975. ED 109475

The Development Associates study was to "...evaluate the effectiveness of the first round of federally administered Part D projects and their components in terms of the extent to which student outcomes attributable to project activities conformed to the legislative intent of Part D funds" (p.2). Legislative intent, level of fiscal inputs, project objectives, emphasis of project activities, impact on students, continuation of project after initial funding, and some overall indicators of project accomplishments was to be reported. The legislative intent for the projects reviewed was to focus on career education within the boundaries of Part D funding. Findings cited from the Development Associates report are briefly summarized below:

1. A review of the year-by-year input data revealed that in most projects, in no single year did the inputs occur at the level planned. It was found that in 37 out of the 50 projects visited (47 percent) of the dollars expended were below the planned level.

2. A review of the stated objective of the 50 projects revealed that in many cases the activities called for were not addressed.

3. On a project-by-project basis the impact of the program on students was small, with the bulk of favorable outcomes in each student group confined to a small group of projects.

4. With respect to elementary, junior high, and senior high familiarization activities, positive indications of project effects on students occurred where relatively more project funds were expended on relatively fewer students.

5. Well over half of the teachers and counselors surveyed in each of the 50 states visited indicated in their judgement it was important to include career education in the school curriculum.

6. In general, neither the federally sponsored activities nor the federally expected student level outcomes of the program occurred at the level planned.

7. The definition of key terms and concepts was neither precise nor consistent at either the federal or local levels.

8. Budgets and expenditure records typically were based on "line-item" rather than programmatic activity categories. Determination of activity cost was very difficult. The difficulty was primarily a result of the grant application and award process which did not specify cost by activity; only in the aggregate.

9. The evidence strongly indicates that exemplary programs require considerable start-up activity and time. Failure to anticipate this adequately appears to have resulted in the inability of projects to meet expectations.

10. Generally, participants in the projects were more exposed to visitors in their classrooms who discussed careers, and went on field trips to learn about jobs, than nonparticipants. The data suggests that this quantitative difference in the number of such experiences was not sufficient to produce a measurable impact on students. Rather, it appears that such activities need to be integrated into a well-planned and comprehensive effort.

11. Continuation of activities beyond the project (the USOE Policy Paper required that grantees make provisions for continuing project activities after Part D was terminated) was disappointing.

12. Only 26% of the projects reported having students in all levels of project activities.

Development Associates concluded that most teachers felt that career education should be an important part of the curriculum, therefore, the first year Part D program had a substantive effect. Even so, they concluded that activities and outcomes did not reach expectations. Clearly defined objectives, definitions, and managerial requirements are needed at project and federal levels.

Assessing Vocational Education Research and Development. Washington, D.C.: National Academy of Sciences, 1976. (COVERD Report) ED 128654

Needless to say, the study that has attracted the most attention in the area of impact is the COVERD Report. The first paragraph of the report is startling in its directness and implications:

> The Committee has found that the $250 million spent by the U.S. Office of Education on vocational education research and development during the last ten years has not had documented, widespread impact. Although the committee did not have adequate data and models for rigorous evaluation, the available data do not indicate that vocational education research and development (R&D) findings and products have had an influence on the knowledge, skills, or employability of large numbers of students. The Committee believes that Vocational Education R&D shares with Education R&D a lack of both demonstrated impact on students and methods for measuring impact.

COVERD highlighted several of the reasons for this limited impact, including shifting research priorities based on political and bureaucratic consideration, geographic restrictions on distribution of R&D funds, lack of coordination between parts, inadequate dissemination and utilization, failure to maximize or measure impact, and slow startup because of the need to build capacity. COVERD believed that the deficiencies stem from a lack of policy, administration, and leadership in vocational education R&D. It noted that, in spite of vocational education's shift in focus from labor market to people, R&D rarely touched on the real

questions or helped to clarify the issues. COVERD was hampered in its own assessment by a lack of objectives in R&D, insufficient data, and subjective impact measures. COVERD recommends some sweeping changes to effect communication and coordination, ensure work on long term problems and needs of special populations, minimize political and bureaucratic influences, improve information handling, and increase dissemination and utilization. COVERD further concluded that there has been more development and demonstration than research, research has been more descriptive than experimental, there are few researchers, career education has received emphasis at the expense of vocational education, and there has been much activity in curriculum development.

Bash, Maurice J. Developing An Instrument for the Assessment of Instructional Materials (Form IV). New York: City University of New York. 1970.

This instrument is designed to provide data on the characteristics of the instructional design of classroom materials. Data is gathered on four constructs: objectives, organization of the material (scope and sequence), methodology, and evaluation. Questions elicit a mixture of yes-no, check list, and summary rating scale answers with open ended responses permitted where an exception to the listed approaches is encountered. The rater progresses through an atomistic analysis of the material to a numerical summary rating of the construct. In this study twenty-five graduate students rated two instructional packages, a reading package and a science package. Ratings were done individually and by groups. Individual responses showed agreement in 56 of 64 responses. Some of the limitations of the questions and the few disparities between individual and team evaluations are discussed. Inter-rater reliability scores both for each of the ratings on the construct and the overall score were greater than .9. Inter-item reliablity estimates were: objectives .38, organization of material .37, methodology .77, evaluation .99, and overall .55. A follow-up study with teachers after they have assessed materials with the instrument is suggested. Finally, general issues in instructional design are discussed. The instrument and a comprehensive glossary are included. (ERIC Abstract--Author/GS)

Berman, Paul and McLaughlin, Miborey Wallin. Federal Programs Supporting Educational Change, Vol. VIII: Implementing and Sustaining Innovations. Santa Monica, California; Rand Corporation, May 1978.

The Rand Corporation (Berman and McLaughlin) conducted a study that aimed to help improve federal change agent policies by describing how the process of innovation works in its local setting, and by trying to discuss what factors affect the innovative process and its outcome. The findings about the effect of federal programs are as follows:

1. Federal change agent policies had a major effect in stimulating local education agencies to undertake projects that are generally consistent with federal categorical guidelines.

2. The net return to the federal investment was the adaption of many innovations, the successful implementation of few, and the long-run continuation of still fewer.

3. All the federal programs had funded some successfully implemented projects as well as dismal failures and many projects in between. (The difference between success and failure depended primarily on how school districts implemented their projects, not on the type of federal sponsorship.)

4. Project outcomes reflected not the amount of funds available, but the quality and behavior of the local staff.

5. Federal funding has bestowed legitimacy on local projects and given them the aura of "special states" which can provide some measure of "protection" for politically controversial or pedagogically untested educational practices.

6. Few districts in the sample under study planned for the long term stability of projects.

7. While the overall effects of federal policy may be disappointing, the positive results shall not be overlooked. Some local projects worked well, and from the successes, factors that determine the fate of innovations can be identified.

In addition to analyzing the effects of federal policies, how characteristics of projects and school districts affect the outcomes of innovations was examined. Rand found that:

1. A project's methods determined its implementation effect, and continuation to only a small and limited extent.

2. More expensive projects were generally no more likely than less expensive ones to be effectively implemented, elicit teacher change, improve student performance or be continued by teachers.

3. Ambitious and demanding innovations demanded teacher change and teacher continuation of project methods without necessarily causing unmanageable implementation problems or diminishing gains in student performance.

4. Implementation strategies are the local decisions and choices, explicit or implicit, on how to put the innovation into practice.

5. Three elements of a school's organizational climate powerfully affected the project's implementation and continuation: the quality of working relationships among teachers, the active support of principals, and the effectiveness of project directions.

6. Change was typically harder to obtain and continue at the secondary level.

7. Districts differ sharply in their capacity to manage change agent projects and in their receptivity toward them.

School districts need institutional assistance but an institutional development strategy can work only if federal officials identify those aspects of the local change process and of district organizational characteristics where federal resources and influence can be effective. According to Rand, the following premises might provide building blocks to formulate this point of view:

1. Educational performance could be improved if more attention were paid to all stages of the local change process.

2. Educational performance could be improved with adaptive implementation assistance.

3. Educational performance could be improved if the capacity of school districts to manage change were enhanced.

Bice, Garry R. An Analysis of Dissemination and Utilization of Vocational Education Research and Development Efforts, Washington, D.C.: National Academy of Sciences, July 1975. ED 130153

Bice gives some recommendations to alleviate some of the problem of dissemination and utilization. The problem areas relate to the responsibilities of the various education agencies, the specificity and types of information or products to be disseminated, target audiences, dissemination techniques, and documentation of utilization. The recommendations are as follows:

(1) Develop a taxonomy for identifying and describing research results, (2) define target audiences and their specific research results, (3) analyze personal and socio-psychological factors involved, (4) develop a process for evaluation of research before dissemination, (5) reexamine procedures for inclusion in information systems, (6) implement a system of regional centers responsible for dissemination and utilization, (7) reexamine federal and state policy, and (8) explore alternative delivery systems for encouraging utilization.

Blake, Joseph F. Dissemination of Research and Development Products and Results in Vocational Education. Washington,D.C.: National Academy of Sciences, August 1975. ED 130156

In this study, Blake describes some of the systematic efforts used in the last decade for disseminating the products of research and development in Vocational Education and provides suggestions for dealing with problems and issues to facilitate the movement of information resources from producers to consumers. The suggestions are as follows:

1. Continuation of AIM/ARM and ERIC/CIJE with adequate funding.
2. Reducing anxiety concerning overlapping and duplication of services.
3. Provision of more coordination, at the federal level, of the various efforts at all levels.
4. Encouraging state vocational education managers and their Research Coordinating Units not giving dissemination top priority at the present time to do so.
5. Developing plans to include school library media specialists presently working at the building level in vocational programs in any scheme to promote sharing activities.
6. Formation and support of knowledge transformation teams at the state and local levels.

Even though there are mechanisms at federal, state and local levels disseminating these products and related information to teachers, administrators and researchers, and many of these systems are working well, much remains to be done. Even if it is assumed that most practitioners are motivated to find and make active use of the best available information it is well known that:

1. Many practitioners do not have a clear understanding

of the relationship between their daily problems and their need for R&D products or information.

2. Help is needed in defining problems clearly or in understanding the nature of the difficulties identified.

3. Many practitioners find it difficult to identify, locate, and acquire potentially useful materials.

4. They need help in locating appropriate products and information.

5. Practitioners are not provided with much information or help as to probable utility reliability, or validity of R&D products and results.

6. Many need some assistance with the practical interpretation and application of most products they find.

Boerrigter, Glenn. "The Impact of Federal Funds and Establishment of Priorities for Research in Vocational and Technical Education," (Found in Sheppard, Ed) Regional Research Conference in Vocational and Technical Education for Secondary and Post-Secondary Personnel. Blacksburg, Virginia: Virginia Polytechnic Institute and State University, 1976.

In a speech delivered at the Regional Research Conference in Vocational and Technical Education for Secondary and Post-Secondary Personnel, Boerrigter made some interesting comments related to the difficult task of assessing the impact of research and development products:

> It was indicated that over the past decade we have put about 250 million into vocational education R&D and that is a fairly accurate figure. Therefore, you can ask the question, where is the impact? Probably in any given year there will be something like 500 separate projects supported. If you include the state and federal part of C and the state part of D, the number may be greater. Quite a few vocational education R&D products have been adopted on a statewide basis. For example, we have State Education Week in the Office of Education. Just this week was Alabama Week. Most of the things they were talking about were the products of R&D and what R&D was doing for Alabama. So we do know that it is making a rather substantial impact but trying to assess it and bring this information to Congress is most difficult. I think there tends to be a distrust of R&D. People want more impact and results out of R&D than we have had in the past. Some of this feeling affects vocational education R&D.

Butt, Richard L. and Wideen, Marvin F. "The Development, Validation, and Use of an Arbitrary Information Scale (AIS) as a Basis for Ex Post Facto Curriculum Evaluation." A paper presented to the American Educational Research Association Annual Meeting, Chicago: April 1974.

Current curriculum evaluation models tend to cater to desirable or ideal situations and offer little help to the evaluation of ongoing curricular innovations, many of which are characterized by little assistance on control of implementation, little monitory or supervision of operation, and haphazard post-implementation modification or development. This paper describes the conception, operationalization, validation, and role of an Arbitrary Implementation Scale (AIS) in an ex post facto curriculum evaluation model which facilitated the province-wide assessment of an inquiry-oriented junior high school science curriculum in Sackatchewan operating within the context described above. The AIS is included in the appendix of this report. (ERIC Abstract/Author).

Carvell, Fred and Draheim, Kirk. Review and Assessment of the Impact on Occupational Education Resulting from the Research and Development Activities Supported by the Division of Vocational and Technical Education of Illinois, Los Altos, California: Tadlock Associates, Inc. August 1972. ED 076785

Tadlock Associates of Los Altos, California completed an assessment of the effectiveness of research and development projects supported by the Research and Development Unit (RDU) of the Illinois Division of Vocational and Technical Education (DVTE) in August 1972. The study concluded that the greatest impact of research and development had been at the local levels where local education agencies (LEAs), colleges, and universities had become involved in the research process. On the whole, many projects didn't make the transition from the research phase to the operational phase in other LEAs because of the lack of a mechanism for accomplishing this. Increasing project emphasis has been placed on career education and the development of occupational programs to prepare students for emerging technologies. Local inputs evidently had little impact on DVTE research and development policy.

Conroy, William G. and Diamond, Daniel E. The Impact of Secondary School Occupational Education in Massachusetts. Boston, Massachusetts: Massachusetts State Department of Education, 1976. ED 122095

Conroy conducted a six-year study to examine the impact of various secondary school occupational education programs in Massachusetts. Focusing upon school-labor market relations, the report aims to provide a base for improving policies to prepare and guide students into successful careers. Among the eleven summary findings was the following: (1) male trade and industrial students who did not attend post-secondary schools earned significantly more money than either non-occupational students who did not attend post-secondary school or male students from all programs who attended or graduated from two-year public colleges and state universities.

Clemmons, Jesse Stewart. Roles and Objectives of State Research Coordinating Units as Perceived by RCU Directors and State Directors of Vocational Education. State College, Pennsylvania: Pennsylvania State University, Dissertation, May 1975.

Clemmons analyzed the Roles and Objectives of State Research Coordinating Units as Perceived by RCU Directors and State Directors of Vocational Education in a dissertation submitted in May 1975 to the faculty of Agricultural Education at Pennsylvania State University. His research objectives were to describe the roles and objectives of RCUs as perceived by their directors operating in various administrative settings and to compare their perceptions with those of state directors to those two categories of individuals in each of the 50 states. The chief findings included the fact that many RCUs have been administratively relocated since 1966. While 57 percent were located within state departments in 1966, this figure had risen to 86 percent in 1974. More than half of all RCUs administered their state's share of exemplary funds. Both RCU and state directors projected greater levels of role responsibility than they perceived were actually happening for RCUs administratively located within the state departments. No change in degree of responsibility was projected for RCUs outside the state departments.

Crawford, Jack J. and others. Evaluation of the Impact of Educational Research and Development Products, Final Report. Palo Alto, California: American Institutes for Research in the Behavioral Sciences, 1972. ED 063281

The overall goal of this exploratory project was to uncover variables likely to be involved in the impact of educational products. Systematic case studies of selected educational products were constructed as a basis for arriving at more precise procedures to assess potential impact. Lists of educational products judged according to specific criteria as having substantial positive impact were developed. The study included the following activities: 1) the development of an initial selection criteria for educational products with impact; 2) the identification and description of products meeting the initial selection criteria; 3) the identification of twenty-one of those products for intensive review; 4) systematic case studies of the twenty-one products tracing the history of each from its origin to its diffusion and adoption; 5) the extraction of generalizations about the products based upon product characteristics, development, evaluation, diffusion, adoption requirements; and 6) an identification of ways whereby information on the impact or potential impact of educational products may be obtained.

Crawford, Jack and others. Selection and Description of Educational Products for a Study of the Development and Impact of Such Products. Palo Alto, California: American Institute for Research, 1971.

This study was designed to examine the process of development of "successful educational products." A number of products which have demonstrated a relatively successful impact in schools were identified. Twenty exemplary educational products with successful impact in schools were identified and subjected to an intensive review. A major objective of the study was to obtain empirical data regarding development and diffusion factors which are related to successful product impact. Two of the major activities of this study were the development of initial selection criteria to identify suitable educarional products and the identification and description of those products meeting the initial selection criteria.

In the development of the criteria, considerations were given to demonstrated effectiveness in improving student performance; recognition of affective as well as cognitive goals; products which may contribute to student development by modifying environment, human interactions, or skills; scope of use; definitional criteria for the purpose of study delimitation.

To identify potential suitable products, the search procedures included: 1) literature reviews utilizing ERIC, PACE, and Science Information Exchange sources;

2) review of selected USOE records not available through standard channels; 3) a review of previous and current projects which examine the impact of various educational programs; and 4) the use of selected nominating panelists representing various sectors of the educational professions.

An indepth study of the educational value was undertaken to establish just what features of the products--"their origins, their developers, their target populations, their dissemination, the prevailing Zeitgeist, etc."--might be identified as common contributors to their eventual impact.

In summary, this document describes products which have emerged from research and development to impact with success upon American education.

Crawford, Lucy C. Information Diffusion and Research Utilization in Vocational Education. Final Report of Research Project. Blacksburg, Virginia: Division of Vocational Education, Research Division, VPI&SU, August, 1973.

The purpose of this publication was to develop a state-wide information diffusion and research utilization system for vocational education personnel. Through various well-planned seminars, an Information, Diffusion, and Research Utilization System for Virginia Vocational Education Personnel was established. The system now includes a storage bank of relevant materials; equipment for reproduction of microfilm and reproduction of hard copies; capability of manual and computer searches; capability of providing selected titles of relevant research and related information on a monthly basis; and a program of instruction for potential users of the system.

Cuadra, Carlos A., and Others. Impact Study of the Annual Review of Information Science and Technology, Final Report. Santa Monica, California: System Development Corp. 1968.

The basic objective of this study was to examine, apparently for the first time in communications research, the impact on professional communication of an annual review publication. A sample of users and non-users of Volume 1 of the Annual Review of Information Science and Technology was identified, and questionnaires were sent to nearly 3,000 of them. The respondents were divided into three groups for analysis: those who had used the Annual Review, those who had only seen it or heard of it, and those who had not yet seen it or heard of it. Users of the Annual Review differed from non-users in a number of ways, particularly on measures of professional activity level, where they were uniformly higher than the non-users. They reported a variety of valuable uses. The impact of the Annual Review is already partially evident from the tendency of users to re-examine cited literature again. Both the questionnaire and several informal interview sessions sought to elicit suggestions for improvement of the series. This study suggests that annual reviews have great potential for advancing many fields of inquiry and should, where possible, be encouraged and supported, preferably without demanding so precipitous a rate of growth toward self-support that the dilution in quality is ultimately self-defeating to the sponsoring organization. (ERIC Abstract--Author/CM)

Dick, Walter. Evaluating Programmatic Impact in Education. Teacher Corpse Research Adaptation Framework. Norman, Oklahoma: University of Oklahoma, 1976. (ERIC Document 132 135).

In Dick's study, he addresses the question of where to begin the evaluation process of impact. He advocated continuous evaluation. The process of evaluating on-going activities during the course of the project is of critical importance both to the management of the project and the eventual sharing of the projects outcome. Dick advocates two evaluations, one internal and another external. The internal evaluation is not involved directly in the project but examines it and reports on the findings.

Dick presents some alternative approaches to evaluation such as quasi-experimental designs and the establishment of criterion standards. (However, Dick contends that impact is next to impossible to assess if the evaluation of the research is ex post facto.)

Dick concluded that evaluating programmatic impact is summative evaluation (helping the potential user to decide whether or not to use (purchase) these developed materials, processes, or programs) rather than formative evaluation (helping the developers of a product process, or a program improve their output during the process of development).

Dille, Jean L. and others. A Review of Vocational Research and Exemplary Projects Conducted in Oregon During Fiscal Years 1970-75 Under the Auspices of Parts C and D of the Vocational Education Amendments of 1968 (P.L. 90-576). Oregon: School of Education, Vocational-Technical Education Unit, Oregon State University, June 1976.

There were three purposes for this study: (1) produce a compendium of "promising practices" developed in Oregon during Fiscal Years 1970-75 under the auspices of Part C and Part D of Public Law 90-576, (2) develop a methodology with which to conduct the review of the vocational research and exemplary projects and to communicate those deemed significant, effective and transportable, (3) make recommendations on the means by which the Oregon Department of Education could increase the probablility of future research and exemplary projects meeting with success in product development and dissemination.

The following are some findings and conclusions from the study:

(1) Of the sixty-six practices examined, forty were judged to meet a significant educational problem, to perform effectively, and to be transportable.

(2) The more recently completed practices were more likely to be included as a "promising practice".

(3) Thirty-five percent of the "promising practices" were developed during a time frame of two or more fiscal years.

(4) "Promising practices" were considered much more effective when funded for two or more years rather than those funded during only one fiscal year.

(5) Projects funded at $5,000 through $15,000 appeared to provide the optimum results.

(6) More practices would have been designated as "promising" if means were available for communicating them to others. (Inadequate documentation and unavailability of material were primary deterrents to the communication of practices.)

Dissemination in Relation to Elementary and Secondary Education: Final Report of the Dissemination Analysis Group to the Dissemination Policy Council: DAG (Dissemination Analysis Group), January 1, 1977.

DAG proposed seven steps to create an interrelated nationwide system for educational dissemination. These steps include:

1. Establish consistent definitions of dissemination in law and in practice.
2. Establish planning mechanisms at the Federal, national, regional, state, and sub-state levels.
3. Establish administrative mechanisms at the Federal, national, regional, state, and sub-state levels.
4. Initiate widespread training programs.
5. Improve research, development, evaluation, and the collection of descriptive data.
6. Increase financial resources for dissemination, and provide for flexibility of use.
7. Develop a shared nationwide vision of a comprehensive educational dissemination system (ii).

In addition, the authors of the DAG Report emphasize the need for planning and coordinating functions at the Federal level "to insure that the separate dissemination activities within agencies and between OE and NIE fit together in support of an interrelated nationwide system."

Dissemination/Utilization Strategies and Impact Studies of Research Co-ordinating Units. Tallahassee, Florida: RCU, Florida Department of Education, 1979.

This document contains results of a survey of projects being conducted by Research Coordinating Units during the 1978-79 fiscal year. Each project was identified by RCU personnel as having a significant impact in the respective states.

Abstracts were collected for the purpose of identifying projects which were having a significant impact on the site. Included in the abstract was a description of the dissemination strategy being utilized so that some concept of appropriate strategies might be identified with the impact of each project.

At the time of printing some 30 abstracts were included and categorized into four sections. These are: (1) administration, management, needs assessment, dissemination, and impact studies; (2) labor market information; (3) instructional programs and curriculum development; and (4) guidance and counseling, and placement and follow-up. (Author Abstract)

Educational Impact: A Report of the Southwide Research Co-ordinating Council on the Impact of Selected Vocational Research and Development Activities. Frankfort, Kentucky: Southwide Research Coordinating Council for Occupational Education, August 1975. ED 118791

"In an effort to document some of the impact of vocational education research, the Southwide Research Coordinating Council, consisting of the Research Coordinating Units in the 14 states in Southeastern United States, has compiled this casebook of impact statements concerning selected research and development activities. While this document is not in any sense an attempt to demonstrate the value of all research and development activities, it is designed to demonstrate that vocational research and development has had a significant impact on the vocational education program, services, and activities in the Southeastern United States." (Taken from Foreword, Robert M. Scheider)

Twenty-six projects are reviewed. Each project resume includes the following information: (1) Project title, (2) Agency, (3) Project director or Contact person, (4) Duration of funds, (5) Purpose of project, and (6) Impact of project in terms of contribution to education.

Ellis, Joseph R. A Final Report of an Impact Assessement of Demonstration Centers as a Dissemination Technique. Springfield, Illinois: Northern Illinois University and Illinois Research and Development Coordinating Unit. October, 1974. ED 102357

The impact of Demonstration Centers as a dissemination technique was the objective of this study. The study was designed to provide the research and development unit of a State division of vocational and technical education (D.V.T.E.) with an assessment of the impact of the "demonstration center method" as utilized by D.V.T.E. The findings were positive. The centers helped to create an awareness of meaningful educational innovations in hundreds of educators throughout the state. Many non-educators were also informed about these innovations as a result of the center's activities. The impact which each center had on educators, instructional programs, materials and practices, and students were most apparent in the center itself and the school or district in which the center was located. Furthermore, the operation of the centers had a positive impact on the students who were part of the innovations being demonstrated, or who assisted in the center's demonstration activities. The influence which the center may have had on students elsewhere was not determined, but there were many favorable reports.

Ellis, Mary. L. A Report to the Nation on Vocational Education. Northern Arizona University, Flagstaff, Arizona: Project Baseline, November 1975. ED 116052

The report reviews the progress and problems of vocational education in realizing the Congressional expectations set forth in the Vocational Education Amendments of 1968. Discussion and analysis focus on the 1971-74 period. The study used analyses of Project Baseline's Common Data Base; many of the results are contained in the text, and information on others is appended. Evidence of a number of achievements, as well as evidence of problems, is presented. Intended as more than a summary of progress and problems, the document describes social, economic, and political conditions affecting vocational education's evolution, in an attempt to define the role of vocational education in a broad social context and to identify the major variables which promise to influence future directions of the program. Research on the relation between education and work revealed radical changes in the value and function of education, with vocational education shown by the study to be in the forefront of the change. In the light of research, the report identifies 20 major issues of importance to the continued development of vocational education and makes specific recommendations for responsive congressional policies. (ERIC Abstract-Author/AJ.)

Cillie, Angelo C. "Diffusion of Knowledge, Research Findings and Innovative Practices in Educational Institutions," Journal of Industrial Teacher Education." Vol. 8, No. 2; (Winter 71) pp. 12-16.

The development of new ideas and practices is better understood than the way in which they are successfully diffused among the intended consumers of the innovations. Gillie found that the business-industry community spends about 75 percent of their research dollars for finding new ways to implement new ideas and practices found by their basic research.

Educational research is only of value when it can be implemented or utilized in our educational institutions. The initiation of a change in an educational institution can be effectively facilitated by the incoorporation of a well-thought out strategy. Five major points worthy of consideration are as follows:

1. The innovation should be sufficiently modified from its original form so that it blends in with the cultural values and past experiences of those persons who are expected to make the adoption.

2. The opinion leaders must be accurately identified and won over to believing that the innovation is important to the institution and its members.

3. The intended users of the innovation must clearly understand the nature of it, and furthermore, must appreciate the need for its incorporation.

4. It must be clear to the intended consumers that one of the chief underlying purposes of the innovation is to enhance the competence of the institutional members.

5. The social consequences associated with the adoption of the innovation should be carefully anticipated.

Goldhammer, Keith; Aldridge, Bill, et al. Research Coordinating Unit Program Evaluation, Corvallis, Oregon: Center for Educational Research and Service, Oregon State University, March 1969.

This early study influenced much of the subsequent evaluation of these agencies. Its main objectives were to determine the: (1) extent to which federally defined objectives of the RCU has been achieved; (2) extent to which federally defined objectives of the RCU program were congruent with those of the individual units; (3) relation between achieving RCU objectives and certain antecedent and independent variables; and (4) the effectiveness with which funds have been used. Questionnaires were sent to RCU directors, State Directors of Vocational Education, university personnel, university-centered RCU directors, supervisors and local vocational education directors. The study found a significant variance in selection and priority ranking of United States Office of Education (USOE) objectives among RCU and state directors from state to state and between RCU and state directors taken as a group. Stimulation and encouragement of occupational education research and development activities were the most frequently chosen objectives of both groups of directors. From that point on, there was little consistent agreement either as to selection or ranking of priority objectives. This indicated a divergent view of goals and purposes of RCUs from state to state. RCU directors perceived a variety of obstacles to

the achievement of objectives. Chief among these were staffing and funding. About 33 percent noted unfavorable research climate in their states, political situations, or administrative organizational problems as impediments. RCU strengths centered around inter-agency cooperation and positive administrative relations for nearly 75 percent of the respondents.

In general, local and university respondents indicated little, if any, knowledge of the RCU, its role, function or existence. Those who did have working relationships with an RCU generally were positive toward it.

Goble, Samuel; and others. Science, Technology and Innovation. Battelle Memorial Institute, Columbus, Ohio: 1973.

This report summarizes the latest efforts in a series sponsored by the National Science Foundation on the innovation process. It adds to the store of retrospective case studies by documenting historically the significant events in several technological innovations of high social impact. These cases illustrate the diverse ways by which research and development activities support each other in the innovation process.

The Battelle study gives two important definitions that need to be defined, Nonmission research and mission-oriented research. Battelle defines the terms as follows: Nonmission-oriented research (NMOR) is research carried on for the purpose of acquiring new knowledge, according to the conceptual structure of the subject or the interests of the scientist, without concern for a mission or application, even though the project within which said research is done may be funded with possible application in mind. Mission-oriented research (MOR) is research carried on for the purpose of acquiring new knowledge expected to be useful in some application.

However, non-mission research is vital in order for innovations to take place. This usually takes long periods of time. Of key events documented, approximately 70% were non-mission research, 20% mission-oriented research, and 10% development and application. The number of nonmission events peaks significantly between the 20th and 30th year

prior to an innovation, while mission-oriented events and those in the development and application area peak during the decade preceding innovation. For the cases studied, the average time from the conception to demonstration of an innovation was nine years.

Battelle reinforced its position on non-mission research by stating that innovations for the next generation depend on today's non-mission research.

Hall, Douglas C. and Alford, Susan E. Evaluation of the National Diffusion Network: Evolution of the Network and Overview of the Research Literature on Diffusion of Educational Innovations, Stanford, California: Stanford Research Institute, 1976.

Hall and Alford present the following "dimensions" or phases of adoption identified in the literature":

Awareness - the source, type, extent, completeness, and flow pattern of information about an innovation in an adoption setting.

Adoption Decision - includes such aspects of the choice to try an innovation as: participants involved, strategy used in reaching consensus, commitments made, scope, and impact.

Implementation - includes such aspects of the initial period of use of an innovation as: type and extent of trial of the innovation; nature, scope, centrality, pattern, and degree of change introduced by the innovation; and nature and scope of adaptation or modification of the innovation.

Incorporation - the length of time and degree of completeness for an innovation to become a standard feature of an adoption setting.

Evaluation - the formal or informal determination of the extent to which an innovation meets staff expectations, is cost-effective, introduces reasonable changes, is feasible to implement, and, in general, constitutes an improvement over previous practice.

Secondary Diffusion - the extent to which an innovation spreads from one adoption setting to others (56-57).

Hall, Gene E. "A Longitudial Investigation of Individual Implementation of Educational Innovations." A paper presented to the American Educational Research Association Annual Meeting, New York: April, 1977.

Implementation is a key factor in shaping school policies. The Procedures for Adopting Educational Innovations Project conducted longitudinal studies of innovation implementation based on the Concerns - Based Adoption Model (CBAM). A key dimension of CBAM, Levels of Use of the Innovation (LoU), was assessed in three longitudinal studies over a two-year period. The samples were approximately 190 elementary school teachers in three states implementing team teaching, approximately 160 university professors implementing instructional modules, and 45 elementary school teachers implementing the Science Curriculum Improvement Study. Data indicates that the hypothesized LoU exist and that individuals tend to move to Routine Level IVA, with this level becoming a basis for later refinement. Most individuals begin use at the Mechanical Level (LoU, III), which is not necessarily resolved by the end of the first cycle of use. There is a movement up and down the levels, and institutional variables affect that movement. Implications are that evaluators should consider LoU in designing studies and interpreting data; staff developers can use LoU to individualize staff development activities; and policy-makers should provide prospective adopters of their innovations with information about the Levels of Use under which they obtained reported evaluation results. (ERIC Document; Author)

Hensley, Susan. Evaluation of Users' Responses to the Information Analysis Products of the ERIC Clearinghouse on Tests, Measurement, and Evaluation. Princeton, New Jersey: ERIC Clearinghouse on Tests, Measurement, and Evaluation. 1978.

To obtain user evaluations of the information analysis products (IAPs) produced by the Educational Resources Information Center Clearinghouse on Tests, Measurement, and Evaluation (ERIC/TM), subjects were randomly drawn from a 1976 list of the clearinghouse's IAP orders. The sample was stratified by the title requested and the following institutional affiliations: (1) commercial organizations; (2) state departments of education; (3) elementary through high schools, including vocational schools; (4) school districts; (5) universities and four-year colleges; and (6) other. A questionnaire was administered to determine the type of professional activity engaged in by the requestor; how the requestor became aware of the document; whether the requestor belonged to ERIC/TM's target population; receipt of the document; reading vs. scanning; and document quality and utility. Indicators of quality were document length, organization, writing, and format. Utility was judged according to the purpose for ordering the document, whether the document was passed on (if so, to whom and for what), and the document's impact on the requestor's subsequent work activities. User evaluations of ERIC/TM's products tend to be high and indicate that the publications are used as reference tools by educators to keep abreast of the literature. The questionnaire and resulting data are appended. (ERIC Abstract/JAC)

Hjelm, Howard F., and Boerrigter, Glenn C. "The Vocational R&D Program." Paper presented at the American Vocational Education Research Association, New Orleans, December 10, 1974.

The accomplishments of Vocational R&D as singled out by Hjelm and Boerrigter in their paper attribute to federal funding (Parts C, D, I) among other things:

(1) New curriculum for bio equipment technicians.

(2) Career education projects which resulted in the development of the World of Construction and World of Manufacturing.

(3) New aviation mechanics curriculum adopted by the Federal Aviation Administration and revised licensing requirements.

(4) The OTIS system (Oklahoma State University).

(5) New nuclear medical technicians curriculum.

(6) MBO (Management By Objectives) developed by Oklahoma.

(7) The State Management Information Systems development at The Ohio State University.

(8) Electro-mechanical technicians curriculum.

(9) CVIS (Computerized Vocational Instructional System) program developed with support of the Illinois RCU

(10) Kingdom-of-Could-Be-You films.

(11) National Occupational Competency Testing Institute located at ETS.

(12) Application of the Delphi technique at Oklahoma State.

(13) Project Talent Support

(14) National experiment in terms of DoD curricular material.

(15) AIM/ARM (compiled at the Center for Vocational Education).

(16) Information retrieval system project of Western Michigan University.

(17) Instructional learning packages for the training of public service employees.

(18) Curriculum for the preparation of laser and electro-optical technicians curriculum.

Hood, P. D., The Relationship Between Purposes for Seeking Information, Sources Used, and Type of Position of the User. San Francisco, CA: The Far West Laboratory for Educational Research and Development, September, 1975.

Hood discusses product use in this study. The discussion includes usefulness of various information sources, problems in using educational information, and the types of information that would be most useful. If one assumes that "usefulness" and utilization are closely related, then the following are important points. The main point is that the product should be presented in a manner that it can be perceived. Hood's comments are as follows:

1. Usefulness and frequency of use of information are related to the role of the client. Teachers report that texts and reference books, curriculum materials, face to face discussions, personal libraries and personal files were the most useful and the most frequently accessed sources. Technical reports, abstracts, and phone contacts with people in other organizations were least useful and least used. As one's position within a school system's hierarchy increases in level, informal, especially face to face, sources are most frequently used.

2. Teachers are more likely than others in the educational community to report that "lack of time, funds, or personnel to search for information" are problems for them in information use; school principals, LEA and SEA administrators are somewhat more prone to complain about scarce or non-existent information.

3. The type of material that educational personnel perceive that "would be most useful" also varies by role. Teachers prefer pragmatic material such as classroom and curriculum materials, solutions to common educational problems, and information about education trends, issues and current events. Principals, on the other hand, find case studies and evaluation reports to be desirable as well.

Hopkins, J. E. Criteria Acceptable to the Educational Developer. Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco: April 1976. (ERIC Document Reproduction Service No. 126-555).

Hopkins suggests a number of criteria for reviewing educational programs and products. Some of these are adoptability, intrinsic quality, desirability, effectiveness and efficiency. The possibility of "spinoffs" are considered an important criteria for model programs/products but not all programs/products.

Hu, Tel-Wei and Stromsdorfer, Ernst W. An Analysis of the Impact of Applied Research and Demonstration Projects in Vocational Education. Washington, D.C.: National Academy of Sciences, July 1975. ED 130151

Hu evaluated the actual impact of research and demonstration projects in vocational education. The impact of research and demonstration projects was analyzed in the areas of curriculum,teacher education, learning processes, capital equipment and facilities, supportive services, and innovative input combinations. The actual contribution of these projects to vocational education was examined in two aspects: the characteristics of research and demonstration projects that satisfy the ideal criteria in actual implementation are discussed,and the extent to which educators and policy makers have made use of the research and demonstration projects is evaluated. The general conclusion is that although some demonstration projects have helped improve instruction techniques, the following limitations exist: (1) lack of adequate research design or evaluation methodology, (2) abundance of descriptive studies, (3) weakness in survey technique and (4) weakness of impact due to small sample size, limited population or triviality of problem tested.

Hull, William L. and Bina, James V. The Influence of Selected Organizational and Administrative Variables on Continued and Extended Use of Exemplary Projects in Vocational Education. Research and Development Series No. 116. Columbus, Ohio: The Center for Vocational Education, The Ohio State University, 1977. ED 138814

All of the operational projects funded from Part D of Public Law 90-576 between July 1, 1970 and June 30, 1973 were studied by mail questionnaire during the spring of 1976. Ninety-two percent of the fifty-four questionnaires were returned in a form which could be used in the study. Comparisons between successful and unsuccessful exemplary program demonstration sites were made based on their level of continuation following the termination of federal funds. Successful demonstration sites tended to:

1. Develop staff position descriptions prior to employment of staff.
2. Accept responsibility for continuing demonstration projects with local funds.
3. Conduct a community survey in advance of proposing a demonstration project.
4. Employ more experienced directors than less successful sites.
5. Communicate more frequently (at least once a week) than unsuccessful sites.
6. Conduct frequent inservice sessions with school staff.
7. Communicate more informally than formally with school staff.
8. Evaluate the progress of their project (at least once a month) more frequently than less successful projects.

Hull, William L. and Kester, Ralph J. Perceived Effectiveness of Innovation Diffusion Tactics. Research and Development Series No. 99. Columbus, Ohio: The Center for Vocational Education, The Ohio State University, 1975. ED 110754

This study of dissemination techniques was part of a larger study to document the empirical dimensions of three conceptual domains of the change process. The domains were the types of innovations, the types of clients using innovations, and the types of dissemination techniques used to implement innovations. The dissemination techniques were developed to represent stages of adoption (awareness, interest, evaluation, trial, and adoption) and types of dissemination techniques (tell, show, discuss, influence, involve, reward/punish, and mandate/order).

Techniques perceived as most effective were interpersonal in nature (asking persons similar to and respected by the user to support the innovation). Least effective techniques were ones offering a reward or threatening to punish the user unless the innovation was implemented. Respondents to the survey recognized the need to comply with mandates or administrative orders, but their preferences for techniques which involved potential users prior to the decision to implement an innovation was present throughout their survey responses.

Linkages from the host demonstration sites to replication sites were not strong. Technical assistance was limited to consultation services for the most part. The authors recommended more incentives be made available for school districts other than the exemplary project's host district to replicate demonstration project results.

Jones, Joan; Bina, James V; and Hull, William L. Increasing the Impact of Innovative Projects. Conference Proceedings. Leadership Training Series No. 51. Columbus, Ohio: The Center for Vocational Education, The Ohio State University, 1977. ED 147571

This document reports on the proceedings of a conference which was held in order to increase the ability of vocational education leaders to disseminate Part D Exemplary project results. One of the objectives was to develop state and local strategies for encouraging the spread of Part D exemplary project results. The following steps were given at the conference by Margaret E. Fergueron in order to meet this objective:

1. Develop a dissemination/diffusion system that will appropriately involve representatives in the Research and Development Section; Area Offices; Bureaus and Sections; Department of Education Research and Development Office; Universities; Community Colleges; School Districts; and the U.S. Office of Education, as necessary to develop plans for reproducing packaging, distributing, and diffusing materials and processes developed through funded vocational projects needed in the improvement of vocational education.

2. Develop, with the assistance of directors of funded projects, descriptions of benefits, costs and organizational arrangements needed to utilize the products and processes being developed.

3. Develop, with the assistance of project directors, educational consultants, local educators and other appropriate persons, a description of the needs of potential users of the procedures and processes to be disseminated and diffused.

4. Develop with the assistance of educational consultants from the Department of Education, local educators and other appropriate persons, a description of advocate roles to disseminate and diffuse the product or process.

5. Select and state obtainable objectives to be achieved in the change process in terms of providing user groups an opportunity to: (a) become aware of products and processes useful in solving their problems; (b) make in-depth explorations into elements of the advocated change having direct interest to them; (c) use the advocated product or process in a limited way as a basis for; (d) evaluating the benefits to their problems; and (e) an opportunity to accept or reject, in whole or in part, the product or process being advocated.

6. Develop cost-effective methods for reproducing, packaging, and distributing the products and processes to be diffused.

7. Develop strategies and activities to achieve each objective for each user group served.

8. Develop time, sequence charts, and budgets for each strategy and activity.

9. Manage the implementation of each strategy, using educational consultants available in the area offices as facilitators and provide additional human and material resources through grants.

10. Develop and conduct, with assistance from educational consultants in area offices and staff in the evaluation section, an impact study of the diffusion plan as a basis of providing information needed in the evaluation and possible revision of the plan.

11. Develop and present interim and final reports of the dissemination and diffusion plans to appropriate personnel in the Bureaus of Vocational Programs and Staff Development; Planning and Budgeting; the Division Director's office and other offices within the State Department of Education and the U.S. Office of Education.

12. Prepare and submit a long-range annual budget for dissemination and diffusion plans for inclusion in the bureau budget.

13. Monitor funded dissemination and diffusion projects to determine successes and problems in operating the plan and to correct deficiences.

14. Establish working relationships with organizational units within and outside the Department of Education having dissemination and diffusion responsibility as a basis for eliminating unwarranted duplication of effort, to keep informed of pertinent developments and to share resources.

15. Review and recommend needed changes in policies and procedures for dissemination/diffusion of vocational education improved products and processes.

Kenneke, Larry J. Updating Promising Practices in Oregon Career and Vocational Education. Final Report. Corvallis, Oregon: Vocational-Technical Education Unit, Oregon State University June 1977. ED 145 143

This project and product is a followup to an earlier study, A Review of Vocational Research and Exemplary Projects Conducted in Oregon during fiscal years 1970-(1975) under the Auspices of Parts C and D of the Vocational Education Amendments of 1968 (P.L. 90-576): A Technical Report (Dille, Suzaki, Kenneke, and Pence, June 1976.) The project staff reviewed available documents on eight projects and recorded pertinent information. Of the eight practices examined, three were judged to meet a significant educational problem, to perform effectively, and to be transportable. However, according to Kenneke:

> The adequacy of the methodologies used to develop and evaluate practices varied widely among projects. However, the methodologies tended to be generally less than adequate. Nearly all projects implicitly or explicity intended to affect student behaviors; but none could provide evidence that students ultimately benefited from the practices that were developed. Of the three practices included in the Handbook (those considered the best of the "Promising Practices"), none had evaluative data on student achievement. Furthermore, for all practices, the only evidence of an effectiveness was the degree to which the developmental methodology used appeared to be adequate. The actual effectiveness of these practices is speculative because a sound developmental methodology only enhances the extent to which a resulting practice will be effective. A sound developmental methodology does not guarantee the effectiveness of a resulting practice.

The findings assumed that a practice was more transportable to another environment if its documentation was complete. In otherwords, there appeared to be a relationship between the "availability of a practice or its description in hard copy

and the degree to which another institution or agency could adopt it, most likely after adapting the practice to its own environment." However, the study found that the degree to which practices were communicable through means other than word of mouth varied among projects. Kenneke stated that it is not conclusive, but a majority of the staff members interviewed indicated that staff commitment, whether it involved the availability of staff time, teachers' attitudes and/or administrators' attitudes, was a key condition to the success or failure of a developmental effort.

Kievit, Mary Bach. Vocational Education Research and Development as a Factor Influencing Teachers to Change Practices. Washington, D.C.: National Academy of Sciences, 1975. ED 130163

With particular attention to vocational research and development, this study reviewed the literature to obtain information on the factors or influences causing teachers to change practices. Very limited empirically derived evidence was found regarding the extent to which vocational research and development has influenced teachers to change practices. Speculation based on informed opinion concluded that the influence of curriculum development and distribution on teacher practice is relatively insignificant.

Knowledge and Policy in Manpower: A Study of the Manpower Research and Development Program in the Department of Labor. Washington, D.C.: National Academy of Sciences, 1975. (DOL/MR&D) ED 118802

The Department of Labor funded the National Academy of Sciences-National Research Council to review, assess and make recommendations about the Manpower Research and Development and Training Act (MDTA) of 1962. The DOL/MR&D Committee took an "impact on policy" approach as it examined manpower research and development. In its study of ten years of Department of Labor manpower research and development, funded at about $250 million, the DIL/MR&D committee reported that there were four areas where substantive accomplishments have been made:

1. The collection and analysis of labor force data permits more thorough and detailed examination of economic, insitutional, psychological, and social factors underlying employment success than ever before possible.

2. The development of new theories to illuminate complexities of labor market operations expecially theories that help explain relationships between market imperfections and individuals' employment experiences, provides new grounds for discussing the role and effectiveness of manpower policies.

3. Program models and techniques for serving the manpower needs of the disadvantaged have been designed and implemented.

4. New methods for assessing manpower policy and program effectiveness have been refined and applied.

While the Committee noted the success with labor force data, new theories on labor market operations, program modules and techniques, and methods of assessing manpower policies, they suggested that there was need for manpower R&D to:

1. Review, analyze and synthesize diverse and scattered manpower studies for implications and contribution to theories and policy;

2. Examine cultural factors of minority and majority groups;

3. Solve the methodological problems associated with job search behavior;

4. Identify, isolate, and elminate racial/job discrimination variables;

5. Strengthen the process for studying nontreatment variables that may have influences on manpower research; and

6. Reopen the study of technological changes on people and the labor market.

Leadership and Change in Vocational-Technical Education: Administrations Workshop for Building Research and Evaluation in Local Practice. Final Report. New Brunswick, New Jersey: Department of Vocational-Technical Education, Rutgers University, July 1970. ED 048461

This workshop was held to consider conditions and practices in educational operations which inhibit the use of research findings, and to develop guidelines for minimizing the effect of deterrents to local implementation of research and evaluation in vocational education. However, a review of all the deterrents to research and evaluation reported at the Workshop indicates that some were not essentially local problems. It was proposed that certain regulations and practices of the State Department of Education and those of colleges and universities could also inhibit the implementation of change. Here it was recommended that departments of vocational education, whether in university or state offices, need to develop more sensitive feedback mechanisms, allowing them to provide needed services with more dispatch. As a result of the Workshop, the Administrators generated the following recommendations for implementing Research and Evaluation into practice:

1. Place an evaluation component in all proposals for state/federal funds.

2. Incorporate research components in all instructional plans; do not concentrate all funds for research in one line item that may be elminated when budget cuts are made.

3. Designate a person or persons responsible for research and for evaluation in the school and in the district.

4. Provide time in teachers' assignments for research and evaluation.

5. Working cooperatively with faculty and staff, establish priorities and strategies for research and evaluation.

6. Set specific performance goals for various instructional programs -- and for the administrative process.

7. Develop a continuing system of evaluation for the system.

8. Use evaluation to identify research questions and use research methods to design and carry out evaluation.

9. Seek the assistance of State Education Department and University Personnel.

10. Incorporate research and evaluation topics into administrative staff meeting agendas.

Literature Review for Development of Criteria to Measure the Impact of Vocational Education Demonstration Projects. Arlington, Virginia: Development Associates, Inc., December 1978.

Development Associates indicated that relatively little has been done to measure the impact in terms of the spread (i.e., diffusion) of educational innovations, although a few researchers have used continuation and adoption as measures of diffusion. Continuation has been used as a measure of institutionalization and project longevity, while both continuation and adoption have been used as measures of project success.

Dissemination strategies were a necessary prerequisite to both continuation and adoption. However, most evaluations of the effectiveness of various strategies are subjective rather than empirical. Dissemination strategies found in the literature by Development Associates were:

1. Direct personal contact;
2. Demonstration project open to visitors;
3. Presentation and/or display at various meetings;
4. Dissemination of printed matter;
5. Dissemination through ERIC;
6. Project descriptions presented at workshop or training sessions;
7. Dissemination through regional labs and demonstration centers; and
8. Endorsement and support from state educational agencies.

The literature indicated that direct personal contact is

one of the most effective dissemination strategies while reliance primarily on printed material is not very effective. The most cost-effective strategies should be considered in a project's dissemination plan. Dissemination measures that appeared in the literature consisted primarily of keeping lists. The measures found by Development Associates were:

1. Number of organizations and groups which attended presentations;
2. Number of printed materials that the project distributed;
3. Number of visitors to project;
4. Inclusion in ERIC;
5. Number and name of task forces in which project staff participated;
6. Statewide diffusion of state adopted curriculum,
7. Cost of dissemination; and
8. Quality of dissemination materials and other dissemination strategies.

Although cost effectiveness of various dissemination strategies and the problem of assessing the quality of dissemination materials were mentioned, little has been done in either of these areas.

The state of the art of measuring what have been considered sucessfully-implemented and documented demonstration projects is more extensive than the state of the art of measuring spread. Factors which contribute to project success and criteria for measuring project success have been addressed in several studies. However, many projects do not have a good evaluation plan built into the project design and some of the measures are weak in reliability and validity.

Project characteristics which contribute to project success that were mentioned in the literature review of Development Associates are:

1. Evaluation measures built into project design;
2. Supportive institutional setting;
3. Sound management;
4. Clearly stated objectives;
5. Adequate time and effort in planning;
6. Clearly defined roles and procedures;
7. Project director and staff should be dedicated;
8. Project characteristics as innovative and necessary (fulfill needs);
9. The provision of adequate support for teachers.

Outcome criteria which were designed to assure project success vary according to the objectives of the project. Development Associates summarized in the following categories:

1. Student behavior/skills/attitudes;
2. Teacher behavior/attitudes;
3. School personnel behavior/attitudes (other than teacher);
4. Procedures/attitudes in school system;
5. Community outcomes;
6. Cost-effectiveness
7. Percentage of objectives achieved.

The greatest proportion of measures in the literature addressed student outcomes.

Lofts, Ada. The Utilization of the Oregon Department of Education Materials by Vocational Teachers in Linn, Benton and Lincoln Counties. Albany, Oregon: Linn-Benton IED, 1977.

The central problem of Lofts' research was to determine to what extent Oregon Department of Education (ODE)-produced-guides and other teaching materials are being utilized by vocational teachers at the preparation and specialization level in state approved vocational programs. The findings of the research revealed that most instructors utilize the ODE materials for more than one purpose. Of 94 secondary instructors that responded to the survey the following uses were indicated:

68% - used materials to develop curriculum
56% - used materials to supplement instruction
52% - used materials to plan their program
20% - used materials for individualized instruction

The following are some of the conclusions of the study:

(1) There is a definite indication that the use of materials varies among teachers of the various occupational clusters.

(2) Most instructors (80%) have ODE materials located in their offices or classrooms.

(3) Teachers indicated that they look to their career directors for information in regard to ODE materials.

(4) Forty out of 93 respondents indicated they had received in-training in the use of ODE materials.

(5) ILS materials are utilized by a few of the instructors of the programs designed for their use on a daily (13%) and a weekly (8%) basis.

Loucks, Susan F. "Levels of Use of the Innovation: The Conceptualization and Measurement of a Variable Useful for Assessing Innovation Implementation by Individuals." A paper presented to the American Educaticnal Research Association Annual Meeting, New York: April, 1977.

Levels of use of the innovation represent behaviors demonstrated by individuals as they grow in the process of innovation implementation. Eight levels of use have been defined, ranging from lack of knowledge about the innovation through highly sophisticated, impact-oriented use. Operational definitions include seven categories of adapter knowledge and activity. A Level of Use Interview procedure has been developed, which assigns a level of use to any individual with respect to any specified innovation. Reliability and validity have been established. Levels of use are useful to administrators, evaluators, and researchers responsible for facilitating, monitoring, and/or evaluating educational change. (ERIC Abstract; Author).

Lynn, Lawrence E. Jr. Knowledge and Policy: the Uncertain Connection, Washington, D.C.: National Academy of Sciences, 1978.

Lynn states that "use of research" is an inexact and confusing concept. The following questions are concerns which arise as to usefulness of research:

(1) What is used

(2) By whom it is used

(3) By how many people it is used

(4) How direct the derivation from research is

(5) How much effort is needed before research is considered "used"

(6) How immediate the use is

If a decision maker considers the findings of a study or a group of related studies for near-term resolution of a probing problem, then that research is being "used." To expect that research will carry the day (or even a portion of the day) is unrealistic. The lack of channels for regularized dissemination of research results is needed. Many attempts in the past have failed. Dissemination tends to be nobody's job

The first way to improve dissemination is for researchers to write better; another device to improve communication is to set up systemized procedures getting research to users. However, the best way is by integrating research dissemination directly into the planning and programming systems. Probably the best organizational channel for research dissemination is the internal planning and analysis office.

Extra agency channels are another means of dissemination since newspapers and general magazines are a major source of reference for policy makers. An article in the New York Times Magazine, Psychology Today, Newsweek or Harper has several advantages. It reaches officials not only of one department but of many departments, the White House staff, and the Congress; furthermore, the public knows about it. There is a better chance of research being reported in full and in context, rather than having snippets selected to buttress a case while other evidence remains buried.

Magisos, Joel H. and Moore, Allen B. Evaluation of Vocational Education R&D Programs: An Integrative Analysis of Recent Studies. Columbus, Ohio: The Center for Vocational Education, The Ohio State University, 1977.

This document reviews and synthesizes five articles. Three of the articles relate to studies of research, demonstration, and curriculum development programs funded under legislation. The three studies are as follows: (1) Assessing Vocational Education Research and Development, (2) Federal Programs Supporting Educational Change, Vol. III, The Process of Change, Appendix D. Innovations in Career Education. (3) An Evaluation of Vocational Exemplary Projects: Part D Vocational Education Act Amendments of 1968. Two other studies were reviewed although they did not directly relate to vocational education research, curriculum development or demonstration programs. However, they were reviewed for the purpose of comparison to the mentioned above. The two studies are as follows: (1) Report to the Congress: What is the Role of Federal Assistance for Vocational Education? (2) Knowledge and Policy in Manpower: A Study of the Manpower Research and Development Program in the Department of Labor.

As a result of summarizing the substance of these reports, the authors sought to find some "common threads among them that might synthesize into conclusions with implications for future programs of self renewal for vocational education." Before the articles are compared and concluding remarks are summarized, each of the five documents are discussed separately including the following sections: (1) Methods, (2) Findings, (3) Conclusions and Recommendations, (4) Critique.

Magisos, Joel H. Problems Associated with Developing State Vocational-Technical Education Information Dissemination Systems. Columbus, Ohio: The Center for Vocational Education, The Ohio State University, April 1972. ED063736

Magisos stated that the ERIC Clearinghouse on Vocational and Technical Education has been trying to develop an effective information network within that field by developing information resources, producing a guide to information systems, conducting a user study, and administering training workshops. In so doing, it has discovered several problems. (1) The vast audience of practitioners at the local level are unfamiliar with ERIC, although they are spending a lot of time seeking information and are dissatisfied with their results. (2) Information products are frequently in the wrong form. (Teachers like journals and magazines, but researchers prefer original reports.) (3) ERIC products are not reaching the local practitioners. (4) Information users need training in ERIC, as do information specialists who want to serve these users. Commitment to developing an information dissemination system at state and local levels is lacking. However, both researchers and educational practitioners need better information and are enthusiastic about the potential of the ERIC system once they have used it successfully.

Manning, Brad A. "The 'Trouble Shooting' Checklists Revisited: The Development of New Innovation-Free Checklists to Measure Change Potential in Higher Educational and School-Based Settings." A paper presented to the American Educational Research Association Annual Meeting, Washington, D.C., March 1975.

This paper describes the continued development of the "Trouble Shooting" Checklists. These checklists are based on change agent responses and are designed to predict an institution's change potential for the adoption of innovations. The development of two new instruments is described, both innovation-free. One applies to higher educational settings, while the other applies to school-based settings. As in the earlier, innovation-specific forms, the new forms are divided into distinct information areas and identify the ideal situation, marginally acceptable and unacceptable situations for innovation adoption. (ERIC Abstract/Author)

Manning, Brad A. "The 'Trouble Shooting' Checklist: A Manual to Aid Educational Change Agents in the Prediction of Organizational Change Potential." Austin, Texas: 1973.

The first section of this manual contains a selective review of organization change literature which focuses on predictive institutional variables as they affect the adoption-diffusion process. The second section describes the development of the Trouble Shooting Checklist (TSC). The third section presents two Trouble Shooting Checklists (TSC-A and TSC-B) and instructions for taking and scoring the tests. The TSC-A focuses on institutions which are concerned with adopting modules, and the TSC-B focuses on institutions which are concerned with adopting a psychological assessment battery with a counseling orientation. The fourth section describes the development of the scoring system and describes a summary of the score ranges for the checklists. The fifth section describes typical sequencing of events and action interventions for institutions which are either ideally, marginally, or unacceptably suited for the adoption of innovations. The final section of the manual offers guidelines for change agents faced with differing institutional situations. (ERIC Abstract/Author)

Mayhew, Lewis B. Higher Education for Occupations. SREB Research Monograph Do. 20, Atlanta, Georgia: Southern Regional Education Board, 1974. ED 097557

Mayhew did research based on a study of curricular and instructional changes taking place in two-and four-year colleges in courses and programs designed to prepare people for vocations or careers. The study also examined some technical, vocational, or career programs offered in noncollegiate institutions to determine whether proprietary or vocational institutions have developed new insights which could be adapted to the collegiate situation. The study had disappointing results, in that vocational or occupational curricula were found to be not particularly innovative; education for career and occupations was found to be a display of traditional practice accompanied by theorizing.

McCaslin, N. L. and others. An Evaluation of the Resource Development Unit of the Kentucky Bureau of Vocational Education. Final Report. Columbus, Ohio: The Center for Vocational Education, The Ohio State University, July 1976. ED 134700

McCaslin, Adams and Gross arrived at several conclusions. Listed below are a few of these:

1. On the average, Kentucky educators feel that the RCU has done an adequate but not an outstanding job in meeting its goals.

2. Half of the Kentucky educators surveyed felt that the various categories of projects have had moderate to high positive impact.

3. The projects funded through the RDU have had the greatest impact on students in the areas of: improved job skills, career and occupational guidance and counseling; and improved awareness of self and career development as reported by project directors. Funded projects have had the least impact on students in the areas of increased attendance rates and dropout prevention.

4. Through an in-depth examination of five high and five low impact projects, a variety of distinguishing characteristics were determined. The characteristics on which the largest differences between higher and lower impact projects were found included:

    a. High impact projects use more objective data (test, empirical data, etc.) to evaluate effectiveness while low impact projects use more subjective data (opinions, testimonial, site review teams).

    b. High impact projects provide more adequate orientation for participants concerning their role in the project.

    c. High impact projects allow project objectives to change during implementation.

    d. High impact projects involve participants more fully in project planning.

e. High impact projects have more accessible planning documents, such as PERT or time effort charts and objectives.

f. High impact projects have less turnover of project staff.

g. High impact projects tend to be sponsored by organizations which have conducted prior research and development efforts.

h. High impact projects have more adequate support services (secretarial, printing, graphics, etc.)

i. High impact projects have more directors from the district or regional level.

McCaslin, N. L. and Walton, John. An Assessment of the Impact of the Wisconsin Vocational Research Coordination Unit. Columbus, Ohio: The Center for Vocational Education, The Ohio State University, October 1974.

The Center for Vocational Education at The Ohio State University completed An Assessment of the Impact of the Wisconsin Vocational Research Coordination Unit in October 1974. The study assessed the impact of vocational education research and exemplary projects funded through the RCU and the Department of Public Instruction (DPI). Its general conclusions were that: (1) the RCU has had a moderate to substantial impact through the projects it has funded while the DPI's impact has been at least moderate and possibly substantial; (2) the basic RCU process of receiving, processing and assisting project is satisfied with its dissemination efforts. The DPI appeared to serve as an important source for new project ideas and did a credible job of providing consultative assistance and establishing project guidelines, however, dissemination was one of several areas of possible improvement; (3) respondents indicated that the RCU has had a moderate impact on occupational education in the state; (4) agencies funded by the RCU in the past are becoming more dependent upon Federal funds for research and development projects. The study also found a decreasing dependency on DPI funds and a corresponding dependency on funds from other sources; and (5) the RCU review process for proposed projects was well-documented and functioned fairly well, however, the DPI project proposal review process was not clearly established and well-documented.

McCaslin, N.L. and Walton, J.R. The Impact of Vocational Education Information Document Cognitive, Affective, and Behavior Effects. Columbus, Ohio: The Center for Vocational Education, The Ohio State University, May 1973.

A specific informational product, The Review and Synthesis of Information on Occupational Exploration, was selected to measure the effects or impact of this product on an identified target population. A goal of this endeavor was to provide the basis for an impact evaluation system for all informational products. Four objectives were developed to evaluate the impact of this informational document. They are as follows: (1) Determine the type of data needed in evaluating the impact of an informational document. (2) Develop procedures for evaluating informational documents (3) Operationalize the collection of data by evaluating the document (4) Test the questionnaire as a strategy for obtaining impact data by using the document. As a result, a model of the impact was developed which proceeded from a conceptual to an operational level and identified important variables. Also, methodological procedures for use in evaluating the impact of an information document was developed.

McCaslin and Walton list the following selected summary statements as important findings of the data analyses:

(1) The audience of this informational document included 47.0 percent local leadership groups, 27.8 percent state leadership groups.

(2) A three stage impact model was proposed. Major elements of this model included cognitive, affective, and behavioral impact. Cognitive impact was observed for 69.8 percent of all usable responses. Affective and behavioral impact was indicated in 46.8 percent of all useable responses. (This was considered to be a substantial amount of impact for an informational document.)

(3) The following generalizations were gleaned from the analysis:

a. The publication was reviewed in some depth by a majority of respondents.

b. Readership of specific sections of the publication varied substantially.

c. A large proportion of respondents made the publication available to colleagues.

d. Respondents employed a wide variety of additional informational sources to learn about occupational exploration.

e. A variety of potential target audiences for this publication were identified by the respondents.

f. A variety of behaviors, related to occupational exploration, was indicated by the respondents.

g. Respondents' attitudes toward the publication were overwhelmingly favorable.

(4) A model of impact, which included awareness, interest, attitude, and behavior, was operationalized. Respondents were classified into interest, attitude and behaviorial criterion groups to assess the adequacy of the model. This analysis indicated that awareness, interest, and behavior are important impact process elements. The role of attitude in this process was indeterminant.

McCracken J. David and Gillespie, Wilma B. Information Utilization by Vocational Educators. Columbus, Ohio: The Center for Vocational Education, The Ohio State University, March 1973. ED 080656

McCracken and Gillespie described the information-seeking behavior of local administrators, teacher educators, state directors, and state supervisors of vocational education. Data from four previous studies were examined and user profiles were prepared for each of the four groups. The profiles contained information describing these eight dimensions of information utilization: (1) the work setting, (2) personal characteristics, (3) major professional problem areas, (4) decision-making mode, (5) information services used, (6) information sources or products used, (7) characteristics or criteria of products used, (8) personal information sources. Guidelines for planning and improving information dissemination systems and information utilization processes were developed by project staff after examining the user profiles and the reactions, suggestions, and criticisms offered by a jury of vocational and technical educators. The guidelines were grouped into the eight dimensions describing information utilization.

McCracken, John David. The Utilization of Information by State Supervisors and Teacher Education Personnel in Vocational and Technical Education. Ph.D. Dissertation, Columbus, Ohio: The Ohio State University, 1970. ED 039369

In this study, data were gathered by mail questionnaire from 230 of the 289 teacher educators and state supervisors in seven states to investigate factors influencing the utilization of information from problem solving in vocational and technical education. Data were treated through a description of the sample, the method of paired comparisons, analysis of contingency tables, and multiple linear regression. Teacher educators were more likely than state supervisors to use research-oriented literature and search impersonal sources of information. State supervisors were more likely than teacher educators to use guidebooks and summaries and interpretations of research, and consult within their organization. Both groups tended to conduct their own literature search, read summaries and interpretations of research, utilize materials from educational institutions, use a library within their organization, and consult with personal sources in problem resolution. The factors of accessibility, ease of use, and degree of experience were positively correlated with frequency of literature source selection. Accessibility appeared to be the most potent variable for prediction of literature source.

Miller, Robert and Miller, La Rue W. Impact of Vocational Education Research at the Federal and State Levels, Project Baseline Supplement Report. Flagstaff, Arizona: Northern Arizona University, October 1974. ED 099687

Project Baseline describes impact as meaning "... the extent to which each school and state education agency has chosen to maintain and extend...the projects."

Based upon this definition and the research compiled by Project Baseline, there is substantial evidence to show that the many federal and state administered research and exemplary programs are producing results. In state administered (Part C) research and federal and state exemplary projects (Part D), ninety percent of the projects show some impact and two-thirds of the projects show considerable impact. Almost all of these projects emphasized immediate applicability to existing or proposed vocational education programs.

Federally administered research projects, Part C discretionary funds, have had wide impact throughout the United States and in some foreign countries. This impact differs from project to project but those registering the greatest impact are in the areas of curriculum revisions and development, management information systems, career selection information and research coordination and dissemination.

Ninety-four percent of all state-administered research (Part C) projects were found to have had some impact. Fifty percent of these have produced results that are being used in the schools where they were implemented. Twenty-nine percent have had widespread implementation in other school divisions.

The impact record of federally administered exemplary projects (Part D) also shows success. Of fifty-four (54) projects supported for three years, forty have had some impact beyond the school where they were implemented, twelve of these forty have had extensive impact within the state, and four have been adopted by schools in other states.

Exemplary projects (Part D) administered by the states have also fared well. A sampling taken from these projects show that ninety-seven percent have had some impact. The results of these projects are being implemented in ninety-one percent of all the schools where the project was conducted, sixty-two percent are being implemented in some schools, and twenty percent of the projects have reported wide acceptance and adoption by other school divisions.

Pascal, Anthony H. et al. Federal Programs Supporting Educational Change, Volume III, The Process of Change, Appendix D. Innovations in Career Education, Santa Monica: Rand, 1975. ED 108328

Rand conducted on-site interviews at nine project sites and reported on seven career education projects. Three of the projects were federally administered; two were state administered; and two were both federal and state administered activities. Interview instruments and methods of collecting this type of information were not included in the case study reports. The following findings are reported:

1. Projects with more explicit and longer planning periods did better; second-round projects are seeking to derive lessons from their predecessors.

2. Our sample of fieldwork sites was so small that we were unable to draw strong conclusions about the preferred site of administration.

3. The small sample and various complicating factors make it impossible to render a judgement as to relative efficiency of federal view; state administration in the first-round career education projects.

4. Well-financed middlesized (school) systems simply tend to go in for innovations.

5. All of the good projects also had good project directors.

6. Whenever possible USOE should work with the LEA itself.

7. It is highly desirable to involve school building personnel in the earliest possible phase of the project.

8. Preplanning has a large payoff.

9. Criteria to select schools for participation in the project varied so extensively that it is difficult to draw generalizations.

10. In the better projects, materials tended to be developed on-site rather than acquired elsewhere.

11. Staff development activities in some places consisted of two weeks in-service training and in other places in as little as three hours.

12. Maintenance of the projects funded under VEA, Part D, in both the federal-and state-administered versions, was a significant problem.

13. There was little visible impact on junior and senior high schools.

14. It is rarely possible to identify what actions the principals took that actually helped a project.

15. State support seems necessary for both continuation and effective dissemination.

Reece, Barry L. "Assessing the Impact of Vocational-Technical Education Research on Higher Education," Found in Sheppard, ED. Regional Research Conference in Vocational and Technical Education for Secondary and Post-Secondary Personnel. Blacksburg, Virginia: VPI&SU 1976.

Reece was complimentary on the impact of funded research and developmental activities on departments and divisions of vocational education in higher education. Although not easy to assess, Reece made the following observations:

1. VTE faculty are conducting R&D activities in areas where too little attention has been given in the past.
2. The availability of R&D funds has contributed to staff development, both directly and indirectly.
3. The pre-service VTE program has been influenced positively by a number of R&D projects funded in recent years.
4. The availability of funds for vocational education research and developmental activities has motivated faculty to deal with problems and issues of real magnitude.
5. There is more specialization in vocational education today and this trend seems to have been influenced, in part, by funded research activities.

Report to the Congress: What is the Role of Federal Assistance for Vocational Education? Washington, D.C.: Comptroller General of the United States, December 31, 1974. (GAO Report) ED 105132

The Comptroller General Report often referred to as the GAO report, evaluates vocational education programs authorized under the 1963 Act (P.L. 88-210) and the 1968 Amendments (P.L. 90-576). The Comptroller General"... focuses on selected aspects of secondary and post-secondary vocational education in seven states visited during the 1973-1974 school year and discusses some underlying factors that inhibit attainment of objectives". GAO reported findings which focused upon the role of federal funds, planning for use of funds, distribution of funds, use of training resources, and relating training to employment. The findings are as follows:

1. GAO found that large amounts of federal funds were used at the state level for administration, the ratio of local and state matching declined, special groups were not given a high priority, and enrollments had not increased proportionate to funding.

2. Better planning would result in better programs. GAO found more compliance than planning, little needs assessment, fragmented organization, problems with advisory councils, and insufficient data.

3. GAO found funds being distributed generally rather than to high need, without regard to needs data, and without regard to local education agency ability to provide its own resources.

4. GAO found that schools want to control the facilities they use, resources haven't been inventoried, costs haven't been compared, schedules haven't been provided, new construction is preferred, and sources of equipment and supplies haven't been explored.

5. GAO found that labor market data wasn't being used, work experience often was not used, and guidance, placement and follow-up were not being used adequately.

6. Other barriers, such as age, sex, and entrance requirements, were found to restrict access to training and employment.

In summary, the GAO report points out the need for closer monitoring of federal funds at all levels and encourages cooperation between and among agencies to provide vocational education for youth and adults. Even though the report is based upon study of only seven states and is directed at Part B programs, recommendations have applications to Vocational Education R&D because of its close connection to operating programs.

Robinson, Boyd Fillmore, Jr. Gatekeepers in Vocational Education. M.S. Thesis; Maryland University, 1971. ED 055226

Robinson states that a "gatekeeper" is an individual within a communication system who, through a process of selection, restricts the flow of information to the receivers. To investigate certain demographic characteristics and opinions which influence county supervisors (gatekeepers) in the selection of publications for dissemination to vocational agriculture teachers, numerous publications were mailed to Maryland county supervisors. The extent of disseminaton of these publications was checked through the vocational agriculture teachers, who also provided opinions regarding what types of publications they needed. Further, the supervisors were interviewed by telephone to obtain the demographic data and their opinions regarding several factors of the publications. Some conclusions reached as a result of the study were: (1) Supervisors were aware of teacher needs but did not disseminate publications to meet these needs, and (2) Supervisors base their opinions of publications in part on the general content of publications.

Scanlon, Robert G. Public Schools for the 80's. Implications for Vocational and Career Education R&D. Occasional Paper No. 20 Columbus, Ohio: The Center for Vocational Education, The Ohio State University, August 1976.ED 137540

The first part of this document is the text of a speech which examines some of the critical events that American society will face during the next 10 years and analyzes these events in light of educational needs primarily at the elementary and secondary levels. The author first notes 15 social trends, identified through the efforts of Research for Better Schools, Inc. (RBS) that will influence the education of the young in the decade ahead. (Some of RBS's activities have been a design for four alternative educational possibilities based on RBS Research; the conducting of two national symposia to explore with educators, economists, and others, how today's social trends and technological trends are likely to influence tomorrow's schools; and the establishing of a consortium of schools, school districts, and other agencies with the express purpose of helping compare future-oriented goals and activities.) In view of expected social trends and changes, the author notes specific implications for career and vocational education. In the discussion of the creation of a comprehensive plan to utilize RBS research results in schools, nine goals for schools are identified, and based on the cited goals. RBS's four alternative designs for schools are described. The second part of this document consists of the author's response to questions relating to future educational leadership, the cost of education, and school-community involvement. (ERIC ABSTRACT-Author/SH.)

Schaefer, Carl J. Helter-Skelter; Vocational Education R&D. Washington, D.C.: National Academy of Sciences, June 1975. ED 130 155

This paper focuses on the federal efforts in vocational research and development (R&D) of the last decade, reviewing major accomplishments, speculating on possible misdirections, and recommending directions for the future. (Note: This was one of the papers prepared for the Committee on Vocational Education Research and Development.) The administration of vocational R&D is briefly described and a historical overview is presented of federal efforts from the passage of the Vocational Act of 1963 to the present status of funding. In addition to the administration's major accomplishment of providing visibility for vocational R&D, several specific accomplishments are enumerated, most of which indicate the emphasis has been on developmental rather than on basic research. In speculating on possible alternatives to past directions, the change in emphasis from research to developmental priorities is traced from the point of view that the haste to operationalize has seriously decelerated vocational research efforts, channeling research monies into programmatic efforts and failing to engage in interdisciplinary research for a long period of time. In addressing the problem of how best to utilize the existing vocational research and development system for improvement, the author argues for more basic research to solve problems encountered in vocational education. An appeal is also made to the two national centers to return to their original mission of vocational R&D, and to the research coordinating units to focus more on research coordination. (ERIC Abstract-Author/NJ)

Sheppard, N. Alan, Ed Regional Research Conference in Vocational and Technical Education for Secondary and Post-Secondary Personnel. Annual Research Conference in Vocational and Technical Education. Blacksburg, Virginia: VPI & SU, 1976. ED 133455

Major contents of these conference proceedings are 10 addresses presented to the whole conference of 62 educators or to small interest groups. Major addresses were (1) "The Importance of Research in Vocational and Technical Education," by J. Robert Warmbrod. (2) "The Impact of Federal Funds and Establishment of Priorities for Research in Vocational and Technical Education," by Glenn Boerrigter, and (3) "Limitations on Data Collection Under New Federal Legislation," by Dave Alexander. Three shorter addresses are on the impact of research at the secondary and postsecondary levels in vocational education. Four presentations to special interest groups deal with proposal writing and project planning, planning and conducting evaluation and followup studies, developing management information systems, and critique and selection of designs for investigating problems in vocational-technical education. Short summaries of four recently completed research projects and an analysis of evaluation forms are also included along with four appendixes: Conference program, list of conference participants, reference materials on proposal writing and project planning, and Virginia vocational education management information reporting forms. (ERIC Abstract-Author/HD)

Sieber, S. D., Louis, K.S. & Metzger, L. The Use of Educational Evaluation of the Pilot State Dissemination Program, New York: Bureau of Applied Social Research, Columbia University, 1972.

Sieber and the team asked their respondents to "Please describe in as much detail as possible the actual use you made of the information or assistance". The responses were then coded into five categories: (1) a specific practice or program was implemented; (2) vague response indicating that some implementation occured; (3) used for planning or proposal writing; (4) the material was read, but no specific use was made of it; and (5) negative comment about the material. Combining the responses the authors gained from the three states into one general set, the following "use" percentages can be found for each category: Category (1), 9%, category (2) 10%, Category (3), 22%; Category (4), 49%; Category (5), 9%.

Although it is unclear what a "good" rate of use should look like, the above gives at least an indication of what it does look like. Categories 1-3, when summed, indicate that over 40% of those responding got some use from the information.

Sims, E. Norman. Development of a Model Research and Development Information Dissemination Program for the Kentucky Bureau of Vocational Education: The Omnibus Dissemination Program. Frankfort, Kentucky: Kentucky State Department of Education, August 1976. ED 135404

This study illustrates the methods of distribution in Kentucky. As a solution to the problem of disseminating information from research and development projects into the field, this project examined a number of diffusion models, developed the Omnibus Model, and tested it. The Omnibus Model consists of eight different action blocks. First, information is acquired both selectively and non-selectively, and then stored. A decision block examines the information about innovations and decides whether it is relevant to present or future needs. If that decision is positive, the information continues to flow through the system to the Communication Committee who channels it to the field via projects, local educational agencies, or the Bureau of Vocational Education. This block serves also as a gatekeeper for asking whether it is a good innovation, whether there is financial support for its diffusion, and whether there might be other more appropriate channels for its diffusion.

Suppes, Patrick. Impact of Research on Education: Some Case Studies. Washington, D.C.: National Academy of Education 1978.

Suppes researched several studies to determine the impact of research on education. He found that research does have an impact and in many different ways. A function of educational research too little considered and appreciated is that of legitimization, giving the support of "facts" and the prestige of science to existing trends and movements. Another measure of the impact of a theory on a profession is the extent to which it is represented in the standard textbook, and studies show that much research is used in textbooks. Other examples which Suppes cited to show impact of research are as follows:

1. Psychoanalysis has had a significant impact on 20th century elementary education.
2. The research of Freud has had great impact on the ideas of our thinking about the child and therefore the education of children.
3. Teacher's attitutes have changed due to findings of research.
4. Impact of language-related research has generally been positive.
5. Basic or theory-oriented research has had powerful effects on the operation of schools such as the care of giftedness, children's behavior, and curriculum.
6. Basic or theory-oriented research contributes to the broad conceptions and fundamental paradigms of human behavior.
7. Conceptions of the learner--conceptions having had their source, at least impact, in basic research - do have an impact on what goes on in the classroom.

Swanson, Gordon I. "Utilization of Research and Development: A Question of Perception," American Vocational Journal Vol. 51, No. 2; (February 1976) pp. 92-94. EJ 134048

Swanson makes some observations which are interesting. First, Swanson states that the gap which separates R&D from utilization in Vocational Education may not be a gap at all. It may be an absolute shortage of R&D, a situation in which there is just not enough new knowledge emerging from the field.

There are at least three types of R&D where utilization occurs but where it is relatively unseen or unaccounted for. They are as follows:

(1) There is a body of R&D which is used even before it is summarized and reported. (2) There is a body of R&D that is used by consumers who have no way of ascertaining the origin of the ideas. (3) There is a body of R&D which comes into play in ways that are quite different from the original intent but in ways that are, nevertheless, valuable and useful.

Finally, special problems are likely to persist if one presumes that the utilization of new knowledge is easy or that the mismatch between research production and research utilization can easily be avoided. The problems are as follows:

(1) There are different interests and attitudes which tend to separate those who are the producers of R&D from those who are its consumers.

(2) There are different time frames between decision making in the operating systems and the delivery of findings from the inquiry system.

(3) There are widely differing expectations about the possible impact of new knowledge and information.

The Federal Investment in Knowledge of Social Problems. Washington, D.C.: National Academy of Sciences, 1978.

The National Academy of Science presented some recommendations in one of their studies, The Federal Investment in Knowledge of Social Problems. First, they recommended that more attention be given to the dissemination of high-quality research results to potential users. Secondly, they recommended syntheses of knowledge gained from research programs. Lastly, it was recommended that more studies of the process of social change and the adoption of innovations be conducted by agencies that support social knowledge production and application activities for these audiences.

The understanding of the process of dissemination and use, and of the role of new information in the process of innovation and change, is regrettably weak. Strengthening it should be an important goal of federal investment in the creation and use of knowledge of social problems.

Some discoveries of research and its dissemination which were identified by the National Academy of Sciences are as follows:

1. Despite the fragmentation of responsibility for research in particular policy areas, little evidence of duplication was found.
2. Numerous aspects of large policy or problem areas are not being adequately pursued.
3. Little coordination process among agencies.
4. Among the agencies supporting social knowledge production and application, conscious emphasis on disseminating research results in ranges from heavy to nonexistent.

5. One reason for the lack of developed policy concerning dissemination or application is that there often is little to disseminate and little need for dissemination effort. (Research administrators have doubts themselves about either the quality of the research or the relevance of the results).

6. Two reasons appear to account for the lack of emphasis on dissemination. First, there is little agreement inside or outside the government concerning the appropriate federal role in disseminating research results. Bureaucratic incentives to disseminate findings are weak and often conflicting. Research findings may be politically and scientifically controversial, and research managers may be reluctant to be put into the defensive role. Secondly, administrators with academic orientations, or those whose research activities are academically oriented, believe they have an automatic dissemination mechanism.

7. Several agencies have taken steps to improve dissemination. One is the practice of depositing approved research reports in the National Technical Information Service. (However, these systems do not synthesize or analyze for quality or relevance. They may turn out reams of undigested research findings that overwhelm potential users. As a consequence, their research results are seldom useful to federal or third-party policymakers). Other efforts by federal agencies to improve dissemination include requiring researchers to prepare executive summaries of their work and comply with other guidelines for final reports.

8. In general, little evidence was found that research administrators have a clear sense of the appropriate audience for the research they support.

9. Little effort is devoted to synthesizing research knowledge or seeing results of a particular research project as a new addition to an existing body of knowledge.

10. Research administrators seldom have a good understanding of the ways in which change and innovations are adopted. Federal research administrators and researchers are frequently isolated from the policy process thus enhancing the role of knowledge brokers. (Knowledge brokers ideally function by dealing on the one hand, with producers of knowledge, providing information on the needs of policy-makers, and, on the other, with policymakers, the users, to whom they provide knowledge from the research community.)

Tittle, Carol Kehr; Spilman, Helen and Faggen-Steckler, Jane. An Exploratory Study of the Impact of Vocational Education Programs: Implications for Funding. New York, New York: Institute for Research and Development, City University of New York, 1977.

This study was concerned with developing definitions of project "Impact" and to relate those definitions to funding decisions made by the Department of Occupational Education Supervision. According to the authors, "the development and assignment of priorities to variables which constitute a definition of high impact projects in vocational education is critical to both funding, that is the allocations of money to individual projects, and to evaluation of these projects." The definition of impact would tie together the two areas of fundings priorities and evaluation.

The definitions of impact were divided into two groups: outcome statements and predictive impact statements. The six outcome impact statements ranked highest were:

(1) Employers are satisfied with graduates of programs.

(2) Program graduates are working in occupations for which they were trained.

(3) Training increases student employment options.

(4) Students trained have a more positive attitude toward work.

(5) Training objectives are met with minimal cost per student.

(6) Job satisfaction of students trained is increased.

The predictive impacts that were identified are ranked as follows:

(1) Students will be trained for available jobs.

(2) Training will be provided to increase students employment options.

(3) Programs will be replicable in other settings.

(4) Students will learn career planning.

(5) Training objectives will be met with minimal cost per student.

(6) Vocational education needs of special groups will be met.

(7) Students will be trained for occupations traditionally dominated by the opposite sex.

The impact statements that appear to be useful and operational as both outcomes and predictions are:

(A) Training objectives are met with minimal cost per student (outcome). Students will be trained for available jobs (predictive).

(B) Program graduates are working in occupations for which they are trained (outcome). Students will be trained for available jobs (predictive).

(C) Training increases student employment options (outcome). Training will be provided to increase students' employment options (predictive).

The priorities stated above can serve to eliminate some variables suggested as important outcomes of programs in vocational education (high impact programs), and hence be considered for their usefulness in translation to data that could be provided at the time funding decisions are made.

Towne, Douglas C. Rural Area Application of Vocational Education Innovations Resulting from Research and Development Programs Final Report, Institute V. Raleigh, North Carolina: North Carolina State University, December,1970. ED 051952

Towne (70) brought together vocational educators, information science experts, and educational change specialists to develop models of information systems for vocational-technical education in rural areas. The institute identified problems in knowledge transfer and utilization of information to bring about changes in instructional programs. The work of groups resulted in three planned strategies for educational change in rural vocational-technical programs. The following stages of the change process were used in all three cases:

1. Building a relationship between the change agent and client
2. Diagnosing the problem
3. Acquiring relevant resources
4. Choosing the solution
5. Gaining acceptance
6. Stabilizing the innovation and generating self-renewal.

Turner, Levena J., ed. A Model For On-going Evaluation And Utilization Of Florida's Vocational Education Research Efforts. Tallahassee, Florida: Florida State University, 1979.

A primary objective of the project was to develop a management tool that could be employed by the RCU to expand evaluation and utilization of all research projects. The model described in this report is considered to be a guide for: (1) establishing a record management system for research project documents; (2) providing a means to enhance the utilization of research efforts; and (3) conducting evaluations of the effectiveness of research efforts.

This guide describes in detail the necessary elements for an RCU management system for all project documents, including: preparation and microfiching of all contracts, quarterly reports and final reports/products; preparation of abstracts for each separate document; compilation of historical summaries of all projects into a notebook; and development of a cross-reference card file system to facilitate retrieval of project materials. Procedures are provided for the assignment of ERIC descriptors to facilitate retrieval of documents in computer searches.

The model for utilization supplies information on publicizing available research, retrieving these research efforts, and dissemination and diffusion strategies. The model for on-going evaluation was designed to conduct evaluation of research efforts periodically. (Author Abstract)

Turner, Levena J., ed. Impact Assessment of Florida Vocational Research. Tallahassee, Florida: Florida State University, 1979.

The initial purpose of the project was to assess the impact of vocational research sponsored through the Florida Research Coordinating Unit (RCU). This assessment included field testing and demonstrating the evaluation portion of a model designed to conduct evaluation of research efforts in Florida annually or on a three, five or ten year basis.

Procedures involved developing a survey instrument which was sent to potential consumers of research--vocational education directors, occupational deans, teacher educators, and SDE regional program consultants--to determine their degree of awareness and utilization of research efforts covering the period of 1969-1976. A 97% rate of response was received from the group of 212 educators.

The consumers' survey revealed that the projects had low impact, mainly due to the fact that most respondents were unaware of the studies. These findings appeared to indicate a need for creating a higher visability and accessibility of completed research products; therefore the report contains a number of recommendations for meeting this need, such as increased publicity in a variety of forms, and training and awareness sessions to introduce material at the application level. (Author Abstract)

Turner, Mary Jane and Haley, Frances. Utilization of New Social Studies Curriculum Programs. SSEC No. 178. Boulder, Colorado. ERIC Clearinghouse for Social Studies/Social Science Education. 1975.

The research in this report presents and analyzes data on the extent of use of nine new secondary social studies curriculum materials in four states. These include: American Political Behavior, Asian Studies Inquiry Series, Episodes in Social Inquiry, Geography in an Urban Age, Holt Social Studies Curriculum, Justice in Urban America, Patterns in Human History, Public Issues Series, and Units in American History. The data also includes selected characteristics of users, their perceptions about the effectiveness of the products, and comparisons with other social studies materials. Nine hundred and eighty teachers in California, Colorado, Connecticut, and Texas responded to and returned the 15-page questionnaire. Findings show that only 42 percent of the teachers use the materials, with the highest percentage coming from Connecticut and the lowest from Texas. Holt Social Studies Curriculum is the most widely used, while Patterns in Human History is the least. Teacher characteristics affecting utilization include holding of a permanent contract, professional status, membership in professional organizations, and location of school. The users have overwhelmingly positive opinions about the effectiveness and comparison of the new materials. The appendix includes a copy of the questionnaire and data sheets on the materials by the Social Science Education Consortium. (ERIC Abstract--Author/DE)

U.S. Department of Health, Education and Welfare. A Practical Guide to Measuring Project Impact on Student Achievement. Washington, D.C.: U.S. Government Printing Office, 1975.

This monograph is an outgrowth of work by RMC Research Corporation entitled, "Planning Study for the Development of Project Information Packages for Effective Approaches to Compensatory Education." This monograph includes methodological issues in the area of educational program evaluation. By integrating accepted statistical, research, and measurement practices, this publication will serve as an informative guidebook to educational evaluators and administrators. This guidebook deals, specifically, with measuring cognitive achievement gains. The entire focus is on obtaining as clear and unambiguous an answer as possible to the question, "How much more did pupils learn by participating in the project than they would have learned without it?" The following are other matters which this monograph addresses:

(1) Provide those concerned with project evaluation with the basic tools they need to conduct technically sound, interpretable evaluation studies.

(2) Evaluation process from the administrative decisions in selecting an evaluation design to the details of collecting, analyzing, and reporting the data.

(3) Twelve hazards which are commonly encountered in educational evaluation and which may completely invalidate otherwise sound studies.

(4) Procedural guide for selecting a suitable evaluation model given the particular set of constraints faced by the project director and evaluator.

(5) Provides descriptive information about five evaluation models suitable for use in assessing the cognitive benefits resulting from local school projects; post test comparison with matched groups, analysis of covariance, special regression, generalized regression and norm-referenced.

U.S. Department of Health, Education and Welfare. A Procedural Guide for Validating Achievement Gains in Educational Projects. Washington, D.C.: U.S. Government Printing Office, 1975.

This is the second in the Office of Education's series of evaluation handbooks. It complements the first, A Practical Guide to Measuring Project Impact on Student Achievement, by approaching the problem from a different viewpoint, that of the interested parties reviewing evaluation results and selecting exemplary projects based on them.

Review and appraisal of an evaluation's procedures are presented in a series of steps. The handbook thus leads the reader systematically to a judgment of whether or not the evaluation results are valid. It also offers suggestions for correcting those results when certain measurement or analysis principles have been violated. Included as appendices are sample project summary worksheets, a discussion of the issues surrounding use of criterion- versus norm-referenced tests, descriptions of the logic and mathematical structures of certain regression models, and an overview of the hazards associated with the use of percentiles and grade equivalent scores to describe children's academic performance.
(Note: Taken from the forward written by Janice K. Anderson)

Venn, Grant. An Analysis of Vocational Education R&D Policies from Three Perspectives. Washington, D.C.:National Academy of Sciences, July 1975. ED 130150

In this analysis paper, Venn concludes that the time spent on the study has not led him to believe that Vocational Education R&D has caused major changes in education to any great degree. Venn comes to the following conclusions, admitting that he can not tell whether they come from his readings, study, experience or personal prejudices;

1. Vocational education R&D, as well as all other R&D, must look at the problems of how to apply the R&D results and present specific process and procedures if its influence is to be greater.

2. R&D evidence must be presented in language that the general administrator policy maker and public can understand.

3. Dissemination of results must be aimed at policy makers and administrators.

4. An expenditure for dissemination of "evaluated" R&D results must be as great or greater than the money spent on R&D.

5. Policy making groups and priority setters in vocational R&D must get advice from people other than researchers and educational specialists in vocational education if their priorities are to be seen as important by the public.

6. A long range federal plan for Vocational R&D is necessary to include:

    a. Research to be done,
    b. Evaluation of results,
    c. Selected dissemination to specific groups,
    d. Periodic outside review.

7. Vocational education R&D must be tried in several different environments at the same time, since local educational units tend to see their use of R&D as more related to their situation than to the R&D evidence.

Venn concludes by saying that one of the problems is the scattered approach. In other words, the researchers do the research, and the administrators do their administrating with a "wide bridge" between the two.

Wanger, Judith. Evaluation Study of NCEC Information Analysis Products: Final Report. Volume I. Description of Study Methodology Findings. Falls Church, Virginia: System Development Corp. 1972.

The quality and utility of NCEC information analysis products, including ERIC clearinghouse products, PREP reports, and EMC bibliographies, are evaluated. The chapters in this volume of the evaluation study are as follows: I. Introduction, which describes the NCEC information analysis products, issues to be addressed, study approach, and report organization; II. Summary, which provides an overview of the entire study in capsule form; III. Review of Survey Methodology, which presents a detailed account of the survey methodology; IV. Description of the Respondent Populations, which describes the survey respondent populations by their various user characteristics; V. Survey Findings on Respondents' Familiarity with NCEC Information Analysis Products, which presents and discusses data concerning familiarity levels of respondent populations; VI. Comparison of the Two Samples in the General Field Survey, which is a simple comparative display of the overall evaluations of substantive papers; VII. Report on the Evaluation Data of NCEC Information Analysis Products, which provides several aggregated data analyses; and VIII. Summary Findings, Conclusions, and Recommendations, which are organized by study objectives and issues.

This study has clearly demonstrated that NCEC information analysis products are, in varying degrees, known and read and, on the whole, are favorably received by the survey-respondent populations. A second and equally significant conclusion is that there is still a great deal of room for improvement in alerting the educational community to information analysis products and in facilitating its access to these products.

Four questions were discussed in the summary findings. They are as follows:

(1) Are Users Familiar With NCEC Information Analysis Products? Among the total 3,013 respondents to the Screening Questionnaire, 2,526 or 87 percent, were familiar with (i.e., had heard about or had read) products from at least one NCEC unit.

(2) Are Products Meeting Needs of Educators? On a scale in which 2.00 represented "moderately great; the topic is of continuing importance to me" and 3.00 represented "very great; had an immediate need for a document on this topic," the mean responses were 2.36 for Readers and 2.49 for Specialists.

(3) What Kinds Of Impact, If Any, Are The Products Having? The major impact of the products is in the application of information to the users' work; they are presumably contributing to educators' professional growth and development. But, beyond this general and rather expected impact, it would appear that NCEC products are having two other kinds of impact: 1) a specific problem-solving impact and 2) an informational impact.

(4) How Well Are The Products Received By Their Users And Intended Audiences? The overall evaluation of documents, across all product types, clearly indicate that the products are favorably received and, from the comments, are appreciated by the respondent population.

Seven appendixes provide the following: Listing of Documents in Product Sample; Forms Used in Obtaining Level-of-Effort

and Level-of Visibility Data; Tabulations on Semi-Professional/Clerical and Non-Labor Costs; Complete Questionnaire Packages; Documentation of Sampling Procedures; Additional Analysis Tables and Glossary (Portion taken from ERIC Abstract-DB).

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